DSA Practice Questions

For Node.js Developer - Fresher Role

 Author: Supriya Haldar

 LinkedIn: https://www.linkedin.com/in/supriyahaldar/

 WhatsApp: +91 8016056204

WHY DSA IS IMPORTANT FOR NODE.JS DEVELOPERS

 Even though you're applying for Node.js roles, DSA knowledge is CRUCIAL because:

✓Most companies test problem-solving skills through DSA questions
✓Helps you write efficient, optimized backend code
✓Essential for technical rounds in service & product-based companies
✓Demonstrates strong programming fundamentals
✓Required for writing scalable and performant applications

WHAT THIS GUIDE COVERS:

• 100+ DSA Problems across 6 core topics
• Easy to Medium difficulty (perfect for freshers)
• Must-solve problems marked with ★
• Topic-wise organized for structured learning
• JavaScript-focused implementation

HOW TO USE THIS GUIDE:

1. Start with Array problems (most frequently asked)
2. Solve all ★ marked problems first
3. Practice on LeetCode, HackerRank, or CodeChef
4. Implement solutions in JavaScript
5. Focus on time & space complexity
6. Review and revise weekly

Let's master DSA together!

1. Array Problems

Basic Array Operations

1. **Find the largest element in an array ★**
2. **Find the second largest element in an array ★**
3. **Reverse an array ★**
4. **Check if array is sorted ★**
5. **Remove duplicates from sorted array ★**
6. Rotate array by K positions
7. **Move all zeros to end ★**

Searching & Sorting

8. **Linear search ★**
9. **Binary search ★**
10. **Find missing number in array (1 to N) ★**
11. **Find duplicate number in array ★**
12. Count frequency of elements
13. Find first and last occurrence of element

Two Pointer & Sliding Window

14. **Two Sum problem ★**
15. **Three Sum problem**
16. **Container with most water**
17. **Maximum subarray sum (Kadane's Algorithm) ★**
18. Maximum product subarray
19. Longest subarray with given sum
20. **Sliding window maximum**

Matrix Problems

21. **Spiral order traversal of matrix ★**
22. **Rotate matrix by 90 degrees ★**
23. Search in 2D matrix
24. Set matrix zeros

2. String Problems

Basic String Operations

25. **Reverse a string ★**
26. **Check if string is palindrome ★**
27. **Check if two strings are anagrams ★**
28. **Find first non-repeating character ★**
29. **Count vowels and consonants ★**
30. Remove duplicates from string
31. Convert string to uppercase/lowercase

Pattern Matching & Substring

32. **Find all substrings of a string**

33. **Longest substring without repeating characters ★**
34. **Longest palindromic substring ★**
35. Check if string contains only digits
36. **Valid parentheses problem ★**
37. Longest common prefix

String Manipulation

38. **Reverse words in a string ★**
39. Remove spaces from string
40. String compression (e.g., 'aabbbcc' -> 'a2b3c2')
41. **Check if string is rotation of another ★**
42. Count and print all permutations of string

3. Linked List Problems

Basic Linked List Operations

43. **Create a linked list (insert at beginning, end, position) ★**
44. **Delete a node from linked list ★**
45. **Reverse a linked list ★**
46. **Find middle element of linked list ★**
47. **Detect loop/cycle in linked list ★**
48. **Find length of linked list ★**
49. Remove duplicates from linked list

Advanced Linked List

50. **Merge two sorted linked lists ★**
51. **Find nth node from end ★**
52. **Check if linked list is palindrome ★**
53. Remove loop from linked list
54. Intersection point of two linked lists
55. Rotate linked list
56. Add two numbers represented by linked lists

4. Recursion Problems

Basic Recursion

57. **Calculate factorial of a number ★**
58. **Calculate Fibonacci series ★**
59. **Print numbers from 1 to N using recursion ★**
60. **Sum of N natural numbers ★**
61. **Power of a number (x^n) ★**
62. Count digits in a number
63. Sum of digits using recursion

Array & String Recursion

64. **Reverse a string using recursion ★**
65. **Check palindrome using recursion ★**
66. **Print all subsequences of array ★**
67. **Generate all subsets/power set ★**
68. Print all permutations of string/array

69. Tower of Hanoi

Backtracking Problems

70. **N-Queens problem**
71. **Sudoku solver**
72. Rat in a maze
73. Combination sum problem

5. Stack Problems

Basic Stack Operations

74. **Implement stack using array ★**
75. **Implement stack using linked list ★**
76. **Check for balanced parentheses ★**
77. **Reverse a string using stack ★**
78. Implement two stacks in one array
79. Design Min Stack (get minimum in O(1))

Stack Applications

80. **Next Greater Element ★**
81. **Next Smaller Element**
82. **Stock Span Problem ★**
83. Largest Rectangle in Histogram
84. **Infix to Postfix conversion**
85. Evaluate Postfix expression
86. Sort a stack

6. Queue Problems

Basic Queue Operations

87. **Implement queue using array ★**
88. **Implement queue using linked list ★**
89. **Implement queue using two stacks ★**
90. **Implement stack using two queues ★**
91. **Implement Circular Queue ★**
92. Implement Deque (Double Ended Queue)

Queue Applications

93. **Reverse a queue ★**
94. **Generate binary numbers from 1 to N ★**
95. First non-repeating character in stream
96. Sliding window maximum using deque
97. Level order traversal of binary tree (BFS)
98. Implement LRU Cache using queue

Connect with me for guidance: LinkedIn & WhatsApp above