Zoho Level 3

Category	Problem / Topic	LeetCode / Reference	Core Concept	Why It Fits Zoho R3
Data Structure Design	LRU / LFU Cache	[LeetCode 146](#) / [LeetCode 460](#)	HashMap + Doubly Linked List	Pure custom DS design; identical to Zoho's LFU Cache task.
	Design Randomized Set	[LeetCode 380](#)	HashMap + ArrayList	Tests O(1) DS logic + state consistency.
	Design Hit Counter / Logger	[LeetCode 362](#)	Queue + Time Window logic	Event-driven DS design, common in Zoho mini-system tasks.
Backtracking / Constraint Search	N-Queens	[LeetCode 51](#)	Recursion + Constraint Pruning	Classic hard recursion; asked in 2023 drive.
	Word Search II	[LeetCode 212](#)	Trie + DFS	Multi-word board search = Zoho favorite.
	Sudoku Solver	[LeetCode 37](#)	DFS + Constraint Checking	Same puzzle style Zoho gives in R3.
	Rat in a Maze (Enhanced)	GFG Classic	Backtracking + Multiple Paths	Traditional Zoho puzzle pattern.
Graphs & Search	Sliding Puzzle	[LeetCode 773](#)	BFS + State Encoding	Repeated in multiple Zoho R3 sets.
	Shortest Path / Dijkstra	[LeetCode 743](#)	Min-heap + Graph Traversal	Optimized path finding; heavy logic tracing.
	Number of Islands II	[LeetCode 305](#)	Union-Find + Dynamic Grid	DSU design + graph connectivity.
Dynamic Programming & Optimization	Weighted Job Scheduling	[LeetCode 1235](#)	DP + Binary Search	Profit optimization = Zoho project logic.
	Edit Distance	[LeetCode 72](#)	2D DP + String Comparison	Core DP problem for advanced candidates.
	Unique Paths III	[LeetCode 980](#)	Backtracking + DP memo	Grid path counting with constraints.
	Longest Increasing Path in Matrix	[LeetCode 329](#)	DFS + Memoization	Combines graph + DP.
Strings & Parsing (Advanced)	Wildcard Matching	[LeetCode 44](#)	DP + Pattern Matching	Appeared in Zoho R3 PDF ("match pattern with * and ?").
	Regular Expression Matching	[LeetCode 10](#)	DP + Regex Automata	Extension of wildcard problem.

	Basic Calculator III	LeetCode 772	Stack + Recursive Parsing	Expression evaluator with parentheses.
	Evaluate Reverse Polish Notation	LeetCode 150	Stack Evaluation	Core parsing skill.
Matrix / Grid Logic Puzzles	Matrix Chain Multiplication	GFG Classic	DP + Parenthesization	Optimization & order calculation.
	Shortest Path in Maze	GFG / Custom	BFS + Queue	Zoho's "multi-direction maze" pattern.
	Water Flow Problem	LeetCode 417	DFS + Multi-Source Traversal	Hard logic simulation.
System / Module Design Questions	Taxi Booking System	Zoho Interview Reports	OOP + Modular Design + File Storage	Often final R3 question; build classes & simulate.
	Library Management System	Classic Design	Class Design + Search + Update	Demonstrates clean OOP thinking.
	Inventory / Warehouse System	Real-World Case	File I/O + HashMap + Menu Driven	Frequently used in product rounds.
	Online Exam System	Internal Zoho Mock	Multi-user Design	Used to test system thinking.

Summary

Area	Focus	Typical Skills	Zoho Weight
DS Design	HashMap + LinkedList + Class Design	Clean architecture, optimization	4/5
Graphs / DP	Problem solving, memoization	BFS, DFS, DP integration	4/5
Backtracking	Recursion, constraint solving	N-Queens, Sudoku, Word Search	3/5
String Parsing	Expression evaluation	Stack, recursion	3/5
System Design	OOP + Business logic simulation	Java classes, menus	4/5