



## Phase 1: Foundations & Logic (Jan 9 – Jan 19)

*Focus: Mastering C++ STL and basic iteration logic.*

Days	Topic	Target
Jan 9 - 10	Patterns & STL	Finish remaining patterns. Learn <code>vector</code> , <code>map</code> , <code>set</code> , and <code>sort</code> in C++.
Jan 11 - 13	Basic Math & Recursion	GCD, Prime, Palindrome. Start basic recursion (Print 1 to N, Factorial).
Jan 14 - 16	Hashing & Basic Sorting	Frequency counting using <code>unordered_map</code> . Learn Selection, Bubble, Insertion sort.
Jan 17 - 19	Advanced Sorting	<b>Merge Sort</b> and <b>Quick Sort</b> (Crucial for interview logic).



## Phase 2: The Interview Core (Jan 20 – Feb 15)

*Focus: Arrays and Binary Search (The most high-yield topics).*

Days	Topic	Key Problems to Solve
Jan 20 - 25	Arrays (Easy/Med)	Two Sum, Kadane's Algorithm, Stock Buy/Sell, Next Permutation.
Jan 26 - 31	Arrays (Hard)	3-Sum, Merge Overlapping Intervals, Repeating & Missing numbers.
Feb 1 - 7	Binary Search (1D/2D)	Lower/Upper Bound, Search in Rotated Array, Search in 2D Matrix.
Feb 8 - 15	BS on Answers	Koko Eating Bananas, Aggressive Cows, Book Allocation (Very Important).



### Phase 3: Linear Data Structures (Feb 16 – March 5)

*Focus: Memory management and Monotonic logic.*

Days	Topic	Key Problems to Solve
Feb 16 - 20	Linked List (Basic)	Insertion/Deletion in Singly & Doubly LL. Reverse a LL.
Feb 21 - 26	Linked List (Hard)	Detect Cycle, Starting point of Cycle, Flattening LL, Clone LL.
Feb 27 - Mar 5	Stacks & Queues	Next Greater Element, Largest Rectangle in Histogram, Sliding Window Max.

Days	Topic	Key Problems to Solve
Mar 6 - 12	Binary Trees	Traversals (In/Pre/Post), Height, Diameter, LCA, Tree Views (Top/Bottom).
Mar 13 - 16	BST & Heaps	Search/Insert in BST, K-th Largest element, Merge K sorted lists.
Mar 17 - 25	Graphs (Major)	BFS/DFS, Dijkstra's, Disjoint Set Union (DSU), Kruskal's.
Mar 26 - 31	DP & Tries	Climbing Stairs, Longest Common Subsequence, Knapsack (Basic patterns).