sLinked Lists DSA Master Checklist

## 1. Basics of Linked List

* ☐ Definition and Use-cases
* ☐ Singly Linked List Structure
* ☐ Node Creation and Linking
* ☐ Traversal and Printing
* ☐ Practice: Create and Print Linked List

## 2. Linked List Operations (Singly)

* ☐ Insert at Head, Tail, Position
* ☐ Delete at Head, Tail, Position
* ☐ Search for a Node
* ☐ Count Nodes / Find Length
* ☐ Practice: Insert Node at Position
* ☐ Practice: Delete Node by Position/Value

## 3. Advanced Operations

* ☐ Reverse a Linked List (Iterative & Recursive)
* ☐ Find Middle of Linked List
* ☐ Detect Cycle (Floyd's Algorithm)
* ☐ Remove N-th Node from End
* ☐ Practice: Reverse List
* ☐ Practice: Find Middle Node
* ☐ Practice: Detect and Remove Loop

## 4. Doubly Linked List

* ☐ Structure and Node Creation
* ☐ Insert/Delete at Head/Tail/Position
* ☐ Traversal in Both Directions
* ☐ Practice: DLL Insert/Delete
* ☐ Practice: Reverse a Doubly Linked List

## 5. Circular Linked List

* ☐ Singly and Doubly Circular Linked Lists
* ☐ Insert/Delete in Circular Lists
* ☐ Traverse Circular List
* ☐ Practice: Josephus Problem

## 6. Sorting and Merging

* ☐ Merge Two Sorted Linked Lists
* ☐ Sort a Linked List (Merge Sort)
* ☐ Remove Duplicates from Sorted List
* ☐ Practice: Merge Sorted Lists
* ☐ Practice: Sort List Using Merge Sort

## 7. Pattern Problems & Misc

* ☐ Palindrome Linked List
* ☐ Intersection Point of Two Lists
* ☐ Detect and Remove Cycle
* ☐ Flatten a Multilevel Linked List
* ☐ Add Two Numbers Represented by Lists
* ☐ Practice: Palindrome List
* ☐ Practice: Intersection of Lists
* ☐ Practice: Add Two Numbers (LeetCode style)

## 8. Two Pointer + Fast/Slow

* ☐ Detect Cycle
* ☐ Length of Loop
* ☐ Find Start of Loop
* ☐ Practice: Linked List Cycle II
* ☐ Practice: Remove Loop