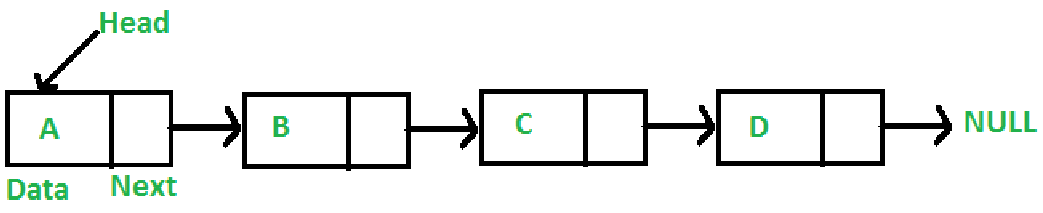
Linked List Data Structure

Last Updated : 22 Apr, 2022

Data Structure and Algorithms Course
Practice Problems on Linked List
Recent Articles on Linked List

A linked list is a linear data structure, in which the elements are not stored at contiguous memory locations. The elements in a linked list are linked using pointers as shown in the below image:



In simple words, a linked list consists of nodes where each node contains a data field and a reference(link) to the next node in the list.

Topics :

- Singly Linked List
- Circular Linked List
- Doubly Linked List
- Misc
- Quick Links

Singly Linked List :

1. Introduction to Linked List
2. Linked List vs Array
3. Linked List Insertion
4. Linked List Deletion (Deleting a given key)
5. Linked List Deletion (Deleting a key at given position)
6. Write a function to delete a Linked List
7. Find Length of a Linked List (Iterative and Recursive)
8. Search an element in a Linked List (Iterative and Recursive)
9. Write a function to get Nth node in a Linked List
10. Nth node from the end of a Linked List
11. Print the middle of a given linked list
12. Write a function that counts the number of times a given int occurs in a Linked List
13. Detect loop in a linked list
14. Find length of loop in linked list
15. Function to check if a singly linked list is palindrome
16. Remove duplicates from a sorted linked list
17. Remove duplicates from an unsorted linked list
18. Swap nodes in a linked list without swapping data
19. Pairwise swap elements of a given linked list
20. Move last element to front of a given Linked List
21. Intersection of two Sorted Linked Lists
22. Intersection point of two Linked Lists.
23. QuickSort on Singly Linked List
24. Segregate even and odd nodes in a Linked List
25. Reverse a linked list

More >>

Circular Linked List :

1. Circular Linked List Introduction and Applications,
2. Circular Linked List Traversal
3. Split a Circular Linked List into two halves
4. Sorted insert for circular linked list
5. Check if a linked list is Circular Linked List
6. Convert a Binary Tree to a Circular Doubly Link List
7. Circular Singly Linked List | Insertion

8. Deletion from a Circular Linked List
9. Circular Queue | Set 2 (Circular Linked List Implementation)
10. Count nodes in Circular linked list
11. Josephus Circle using circular linked list
12. Convert singly linked list into circular linked list
13. Circular Linked List | Set 1 (Introduction and Applications)
14. Circular Linked List | Set 2 (Traversal)
15. Implementation of Deque using circular array
16. Exchange first and last nodes in Circular Linked List

More >>

Doubly Linked List :

1. Doubly Linked List Introduction and Insertion
2. Delete a node in a Doubly Linked List
3. Reverse a Doubly Linked List
4. The Great Tree-List Recursion Problem.
5. Copy a linked list with next and arbit pointer
6. QuickSort on Doubly Linked List
7. Swap Kth node from beginning with Kth node from end in a Linked List
8. Merge Sort for Doubly Linked List
9. Create a Doubly Linked List from a Ternary Tree
10. Find pairs with given sum in doubly linked list
11. Insert value in sorted way in a sorted doubly linked list
12. Delete a Doubly Linked List node at a given position
13. Count triplets in a sorted doubly linked list whose sum is equal to a given value x
14. Remove duplicates from a sorted doubly linked list
15. Delete all occurrences of a given key in a doubly linked list
16. Remove duplicates from an unsorted doubly linked list
17. Sort the biotonic doubly linked list
18. Sort a k sorted doubly linked list
19. Convert a given Binary Tree to Doubly Linked List | Set
20. Program to find size of Doubly Linked List
21. Sorted insert in a doubly linked list with head and tail pointers
22. Large number arithmetic using doubly linked list
23. Rotate Doubly linked list by N nodes
24. Priority Queue using doubly linked list
25. Reverse a doubly linked list in groups of given size
26. Doubly Circular Linked List | Set 1 (Introduction and Insertion)
27. Doubly Circular Linked List | Set 2 (Deletion)

More >>

Misc :

1. Skip List | Set 1 (Introduction)
2. Skip List | Set 2 (Insertion)
3. Skip List | Set 3 (Searching and Deletion)
4. Reverse a stack without using extra space in O(n)
5. An interesting method to print reverse of a linked list
6. Linked List representation of Disjoint Set Data Structures
7. Sublist Search (Search a linked list in another list)
8. How to insert elements in C++ STL List ?
9. Unrolled Linked List | Set 1 (Introduction)
10. A Programmer's approach of looking at Array vs. Linked List
11. How to write C functions that modify head pointer of a Linked List?
12. Given a linked list which is sorted, how will you insert in sorted way
13. Can we reverse a linked list in less than O(n)?
14. Practice questions for Linked List and Recursion
15. Construct a Maximum Sum Linked List out of two Sorted Linked Lists having some Common nodes
16. Given only a pointer to a node to be deleted in a singly linked list, how do you delete it?
17. Why Quick Sort preferred for Arrays and Merge Sort for Linked Lists?
18. Squareroot(n)-th node in a Linked List
19. Find the fractional (or n/k – th) node in linked list
20. Find modular node in a linked list

21. Construct a linked list from 2D matrix
22. Find smallest and largest elements in singly linked list
23. Arrange consonants and vowels nodes in a linked list
24. Partitioning a linked list around a given value and If we don’t care about making the elements of the list “stable”
25. Modify contents of Linked List

Quick Links :

- ‘Practice Problems’ on Linked List
- ‘Videos’ on Linked List
- ‘Quizzes’ on Linked List