Deletion at beginning (Removal of first node) in a Linked List

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Given a **linked list**, The task is to **remove** the first node from the given **linked list**.

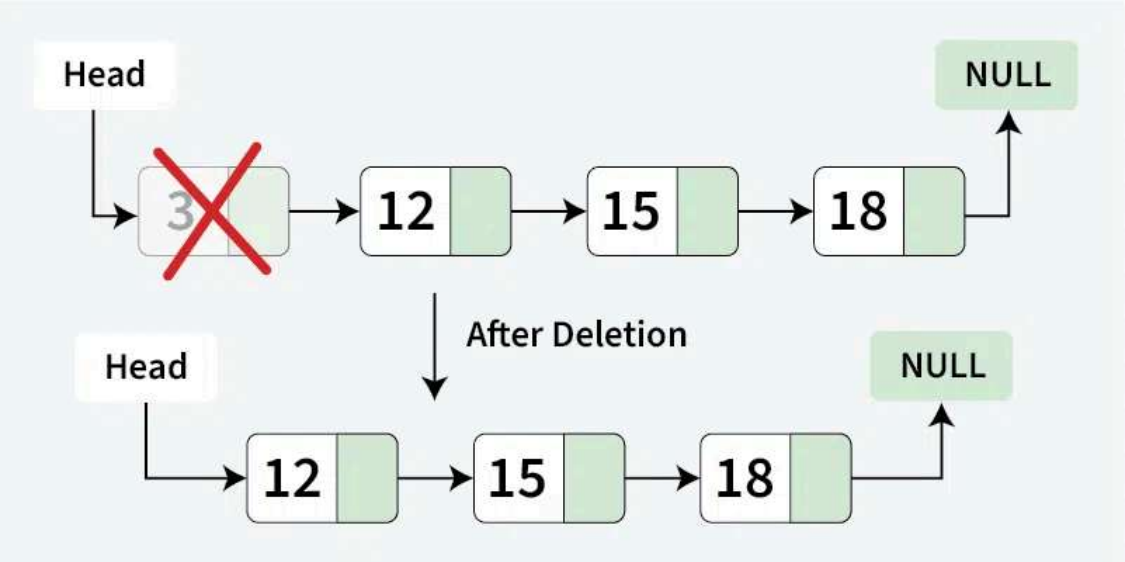
Examples:

> ***Input :*** *head : 3 -> 12 -> 15 -> 18 -> NULL*
> ***Output :*** *12 -> 15 -> 18 -> NULL*

> ***Input :*** *head : 2 -> 4 -> 6 -> 8 -> 33 -> 67 -> NULL*
> ***Output :*** *4 -> 6 -> 8 -> 33 -> 67 -> NULL*

By Shifting head node to next node of head – O(1) Time and O(1) Space

> *To remove the first node of a **linked list**, store the current **head** in a temporary variable **(temp)**, move the **head** pointer to the next node, **delete** the temporary **head** node and finally , return the new **head** of the linked list.*



Deletion at beginning in a Linked List

Below is the implementation of the above approach:

C++ C Java Python C# JavaScript

```
// C# program to delete the head node
// from a linked list

using System;

class Node {
    public int data;
    public Node next;

    public Node(int data) {
        this.data = data;
        this.next = null;
    }
}

class GfG {

    // Delete the head node and return the new head
    static Node DeleteHead(Node head) {

        // Check if the list is empty
        if (head == null)
            return null;

        // Move the head pointer to the next node
        head = head.next;

        return head;
    }

    static void PrintList(Node curr) {
        while (curr != null) {
            Console.Write(curr.data + " ");
            curr = curr.next;
```

```
        }
    }

    static void Main() {

        // Create a hard-coded linked list:
        // 3 -> 12 -> 15 -> 18
        Node head = new Node(3);
        head.next = new Node(12);
        head.next.next = new Node(15);
        head.next.next.next = new Node(18);
        head = DeleteHead(head);
        PrintList(head);
    }
}
```

Output

```
12 15 18
```

Time Complexity: O(1), because the operation to delete the head node is performed in constant time.
Space Complexity: O(1)

Delete First Node of Singly Linked List

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Deletion at beginning (Removal of first node) in a Doubly Linked List

Given a doubly linked list, the task is to delete the node from the beginning of the linked list. Examples: Input :Â 1 <-> 2 <-> 3 -> NULLOutput :Â 2 <-> 3 <-> NULL Input :Â 2 <-> 4 <-> 6 <-> 8 <-> 33 <-> 67 <->...

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Deletion at end (Removal of last node) in a Linked List

Given a linked list, the task is to delete the last node of the given linked list. Examples:Â Â Input: 1 -> 2 -> 3 -> 4 -> 5 -> NULLOutput: 1 -> 2 -> 3 -> 4 -> NULL Explanation: The last node of the linked list is 5, so 5 is...

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Delete Kth nodes from the beginning and end of a Linked List

Given a singly Linked List and an integer K denoting the position of a Linked List, the task is to delete the Kth node from the beginning and end of the Linked List. Examples: Input: 1 ? 2 ? 3 ? 4 ? 5 ? 6, K = 3Output: 1 ? 2 ...

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Insert a Node at Front/Beginning of Doubly Linked List

Given a Doubly Linked List, the task is to insert a new node at the beginning/start/front of the linked list. Examples: Input: Linked List = 2 <-> 3 <-> 4 -> NULL , New Node = 1Output: 1 <-> 2 <-> 3 <-> 4 -> NULL...

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Deletion at end (Removal of last node) in a Doubly Linked List

Given a doubly linked list, the task is to delete the last node of the given linked list. Examples: Input:Â 1 <-> 2 <-> 3 <-> NULLOutput:Â 1 <-> 2 <-> NULLExplanation:Â The last node of the linked list is 3, so 3 is deleted...

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Insert a Node at Front/Beginning of a Linked List

Given a linked list, the task is to insert a new node at the beginning/start/front of the linked list. Example: Input: LinkedList = 2->3->4->5, NewNode = 1Output: 1 2 3 4 5 Input: LinkedList = 2->10, NewNode =...

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Swap first odd and even valued nodes from the beginning and end of a Linked List

Given a singly Linked List, the task is to swap the first odd valued node from the beginning and the first even valued node from the end of the Linked List. If the list contains node values of a single parity, then no...

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Insert Node at the End of a Linked List

Given a linked list, the task is to insert a new node at the end of the linked list. Examples: Input: LinkedList = 2 -> 3 -> 4 -> 5, NewNode = 1Output: LinkedList = 2 -> 3 -> 4 -> 5 -> 1 Input: LinkedList = NULL, NewNode =...

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Move first element to end of a given Linked List

Write a C function that moves first element to end in a given Singly Linked List. For example, if the given Linked List is 1->2->3->4->5, then the function should change the list to 2->3->4->5->1. Algorithm: Traver...

14 min read

Insert a node in Linked List before a given node

Given a linked list, the task is to insert a new node with a specified value into a linked list before a node with a given key. Examples Input: head: 1 -> 2 -> 3 -> 4 -> 5 , newData = 6, key = 2Output: 1 -> 6 -> 2 -> 3 -> 4 -> ...

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