

Remove Nth Node Java



write java code for the Given the head of a linked list, remove the nth node from the end of the list and return its head.

Input: head = [1,2,3,4,5], n = 2

Output: [1,2,3,5]

use public ListNode removeNthFromEnd(ListNode head, int n) {

}



Here's a Java implementation for removing the nth node from the end of a linked list:

java

```
class ListNode {
    int val;
    ListNode next;

    ListNode() {}
    ListNode(int val) { this.val = val; }
    ListNode(int val, ListNode next) { this.val = val; this.next = next; }
}

public class Solution {
    public ListNode removeNthFromEnd(ListNode head, int n) {
        // Create a dummy node to simplify edge cases
        ListNode dummy = new ListNode(0);
        dummy.next = head;
        ListNode first = dummy;
        ListNode second = dummy;

        // Move first pointer n+1 steps ahead
        for (int i = 0; i <= n; i++) {
            first = first.next;
        }

        // Move both pointers until first reaches the end
        while (first != null) {
            first = first.next;
            second = second.next;
        }

        // Remove the nth node
        second.next = second.next.next;

        return dummy.next; // Return the head of the modified list
    }
}
```

Explanation:

1. **Dummy Node:** We use a dummy node to handle edge cases like removing the head node.
2. **Two Pointers:** We set two pointers, `first` and `second`. The `first` pointer is moved `n+1` steps ahead, so when `first` reaches the end, `second` will be at the node just before the one to

be removed.

3. **Remove Node:** We update the `next` pointer of `second` to skip the node to be removed.
4. **Return:** Finally, we return `dummy.next`, which points to the head of the modified list.

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