Solution Review: Deletion by Value

This review provides a detailed analysis of the different ways to solve the Deletion by Value challenge.

We'll cover the following

Solution: Search and Delete

main.py

LinkedList.py

Node.py

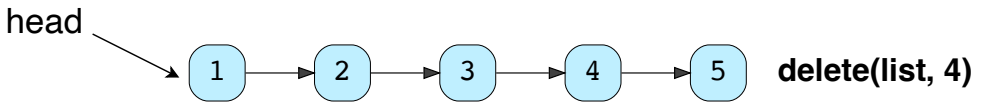
```
from LinkedList import LinkedList
from Node import Node


def delete(lst, value):
    deleted = False
    if lst.is_empty():  # Check if list is empty -> Return False
        print("List is Empty")
        return deleted
    current_node = lst.get_head()  # Get current node
    previous_node = None  # Get previous node
    if current_node.data == value:
        lst.delete_at_head()  # Use the previous function
        deleted = True
        return deleted

```

```
    # Traversing/Searching for Node to Delete
    while current_node is not None:
        # Node to delete is found
        if value == current_node.data:
            # previous node now points to next node
            previous_node.next_element = current_node.next_element
            current_node.next_element = None
            deleted = True
            break
        previous_node = current_node
        current_node = current_node.next_element

```



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The algorithm is very similar to `delete_at_head`. The only difference is that you need to keep track of two nodes, `current_node` and `previous_node`.

`current_node` will always stay one step ahead of `previous_node`. Whenever `current_node` becomes the node to be deleted, the `previous_node` starts pointing at the node next to `current_node`. If `current_node` is the last element, `previous_node` will simply point to `None`.

Congrats! You just implemented the **deletion at tail** strategy as well.

Time Complexity

In the worst case, you would have to traverse until the end of the list. This means the time complexity will be *O(n)*.

So far we have only talked about singly linked lists.

What if our list has bidirectional links? We'll find out more in the next lesson.

Interviewing soon? We've partnered with Hired so that companies apply to you instead of you applying to them. See how

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Doubly Linked Lists (DLL)

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