Occurence Of An Integer In A Linked List

solved by	Senan
Platform	GeeksForGeeks
difficulty	Easy
tags	Linked List
language	C++
solved on	@26/10/2024
link	https://www.geeksforgeeks.org/problems/occurence-of-an-integer-in-a-linked-list/1
Completion	☑

Intuition

We want to count the occurrences of a specific key in a linked list. The plan is to traverse the linked list, checking each node's data to see if it matches the given key. For each match, we increase the count.

Approach

1. Initialize a counter `keyCount` to zero.
2. Start at the head of the linked list and traverse through each node.
3. For each node, check if its data matches the given key:
    - If it does, increment `keyCount`.
4. Move to the next node until we reach the end of the list (i.e., `temp` becomes `NULL`).
5. Return `keyCount`, which now holds the total number of occurrences of the key in the list.

Complexity

Time Complexity:

The time complexity is **O(n)**, where **n** is the number of nodes in the linked list. This is because we need to visit each node once to check if it matches the key.

Space Complexity:

The space complexity is **O(1)**, as we only use a constant amount of extra space for the counter and a temporary pointer.

Code

```
class Solution {
  public:
    int count(struct Node* head, int key) {
        int keyCount = 0;
```

```
        Node* temp = head;
        while(temp){
            if(temp->data == key) keyCount++;
            temp = temp->next;
        }

        return keyCount;
    }
};
```