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Write a function that counts the number of times a given int occurs in a Linked List

Here is a solution.

Algorithm:

```
1. Initialize count as zero.
2. Loop through each element of linked list:
     a) If element data is equal to the passed number then
        increment the count.
3. Return count.
```

Implementation:

```
#include<stdio.h>
#include<stdlib.h>

/* Link list node */
struct node
{
    int data;
    struct node* next;
};

/* Given a reference (pointer to pointer) to the head
  of a list and an int, push a new node on the front
  of the list. */
void push(struct node** head_ref, int new_data)
{
    /* allocate node */
    struct node* new_node =
            (struct node*) malloc(sizeof(struct node));
```

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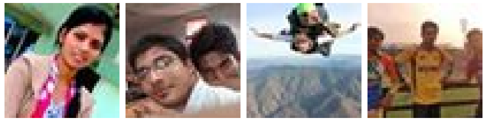

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```
    /* put in the data  */
    new_node->data  = new_data;

    /* link the old list off the new node */
    new_node->next = (*head_ref);

    /* move the head to point to the new node */
    (*head_ref)    = new_node;
}

/* Counts the no. of occurences of a node
   (search_for) in a linked list (head)*/
int count(struct node* head, int search_for)
{
    struct node* current = head;
    int count = 0;
    while (current != NULL)
    {
        if (current->data == search_for)
           count++;
        current = current->next;
    }
    return count;
}

/* Drier program to test count function*/
int main()
{
    /* Start with the empty list */
    struct node* head = NULL;

    /* Use push() to construct below list
     1->2->1->3->1  */
    push(&head, 1);
    push(&head, 3);
    push(&head, 1);
    push(&head, 2);
    push(&head, 1);

    /* Check the count function */
    printf("count of 1 is %d", count(head, 1));
    getchar();
}
```

Time Complexity: O(n)

Auxiliary Space: O(1)

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Auxiliary Space: O(1)

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deepuanand · 13 days ago

Via Tail Recursion...

```
int count_n_in_ll(node_t *head,int n)
{
static int count = 0;
if(head == NULL) {
if(count == 0) {
printf("either element not present in list or linklist is empty\n");
return -1;
}
return count;
}
if(head->data == n)
count++;
return count_n_in_ll(head->next,n);
}
```

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Sandeep · 3 months ago

```
public void countRepeated(int n){

Node main = start;

int count = 0;
```

705

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```
if(main.getData() == n){ //To check for start node
count++;
}

while(main.getLink() != null){ //To check for remaining nodes excluding //last n

if(main.getData() == n){
count++;
}

main = main.getLink();
}

if(main.getData() == n){ //To check for last node
count++;
}

System.out.println("The count of repeated number is : " + count);

}
```

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ravikant • 4 years ago

Common people post questions like these :P
They spoil such a good site !!

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a.rookie.programmer ➦ ravikant • 6 months ago

this site is for common people.. if u think u are an exceptional program
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what do you mean y common people? Are u a super hero or master of people like you that good is getting better and bad is getting worst

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geeksforgeeks • 5 years ago

@Snehal: Time complexity is definitely O(n) but space complexity is O(1) as w

^ | ⌄ • Reply • Share ›

Shailedra ➦ geeksforgeeks • 3 months ago

i think Space complexity singly linked list is O(n)

^ | ⌄ • Reply • Share ›

Prateek Sharma ➦ geeksforgeeks • a year ago

I think Auxiliary space is o(1) but space complexity is o(n)...

```
/* Paste your code here (You may delete these lines if not wr:
```

1 ^ | ⌄ • Reply • Share ›

GeeksforGeeks ➦ Prateek Sharma • a year ago

GeeksforGeeks ↪ Prateek Sharma • a year ago

Thanks for pointing this out. We have updated the post.

^ | ˅ • Reply • Share ›

Snehal • 5 years ago

I didnt get how it is O(1)?
anyway we need to traverse the complete linked list to count the occurrence o
n==(constant) and so it is o(1) , then it is wrong assumption,becoz at worst/ba
the ll in the approach used by u

^ | ˅ • Reply • Share ›

geeksforgeeks • 5 years ago

@Shikha: Thanks very much for pointing this out. We have corrected the spac

^ | ˅ • Reply • Share ›

Shikha • 5 years ago

Hi,
Space complexity is O(1) not O(n) here. (http://geeksforgeeks.org/?p=85...)

^ | ˅ • Reply • Share ›

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