

Reto Semestral – Ronda 1

Problema 1- fácil

```
1 > #include <bits/stdc++.h>--
46
47 // Complete the insertNodeAtTail function below.
48
49 /*
50  * For your reference:
51  *
52  * SinglyLinkedListNode {
53  *     int data;
54  *     SinglyLinkedListNode* next;
55  * };
56  *
57  */
58 SinglyLinkedListNode* insertNodeAtTail(SinglyLinkedListNode* head, int data) {
59     if (head == NULL){
60         head = new SinglyLinkedListNode(data);
61     }else{
62         SinglyLinkedListNode* curr = head;
63         while(curr->next != NULL){
64             curr = curr->next;
65         }
66         curr->next = new SinglyLinkedListNode(data);
67     }
68     return head;
69 }
70
71 > int main() --
```

Problem

Submissions

Leaderboard

Discussions

Editorial

Practice > Data Structures > Linked Lists > Insert a Node at the Tail of a Linked List

Exit Full Screen View

This challenge is part of a tutorial track by MyCodeSchool and is accompanied by a video lesson.

You are given the pointer to the head node of a linked list and an integer to add to the list. Create a new node with the given integer. Insert this node at the tail of the linked list and return the head node of the linked list formed after inserting this new node. The given head pointer may be null, meaning that the initial list is empty.

Input Format

You have to complete the `SinglyLinkedListNode* insertNodeAtTail(SinglyLinkedListNode* head, int data)` method. It takes two arguments: the head of the linked list and the integer to insert at tail. You should **not** read any input from the stdin/console.

The input is handled by code editor and is as follows:

The first line contains an integer n , denoting the elements of the linked list.

The next n lines contain an integer each, denoting the element that needs to be inserted at tail.

Constraints

- $1 \leq n \leq 1000$
- $1 \leq list_i \leq 1000$

Output Format

Insert the new node at the tail and just `return` the head of the updated linked list. Do **not** print anything to stdout/console.

The output is handled by code in the editor and is as follows:

Print the elements of the linked list from head to tail, each in a new line.

Sample Input

```
5
141
302
164
530
474
```

Sample Output

```
141
302
164
```

Line: 70 Col: 1

Upload Code as File

Test against custom input

Run Code

Submit Code

Problem Solving

You have earned 5.00 points!

You are now 24 points away from the 1st star for your problem solving badge.

20%

6/30

Congratulations

You solved this challenge. Would you like to challenge your friends?

[f](#)[t](#)[in](#)

Next Challenge

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin)

Download

Expected Output

Download

```
1 5
2 141
3 302
4 164
5 530
6 474
```

```
1 141
...
```


Problema 3- fácil

H

Practice > Data Structures > Linked Lists

Insert a node at a specific position in a linked list

Exit Full Screen View

Problem

Submissions

Leaderboard

Discussions

Editorial

This challenge is part of a tutorial track by [MyCodeSchool](#) and is accompanied by a video lesson.

You're given the pointer to the head node of a linked list, an integer to add to the list and the position at which the integer must be inserted. Create a new node with the given integer, insert this node at the desired position and return the head node.

A position of 0 indicates head, a position of 1 indicates one node away from the head and so on. The head pointer given may be null meaning that the initial list is empty.

As an example, if your list starts as $1 \rightarrow 2 \rightarrow 3$ and you want to insert a node at position **2** with *data* = 4, your new list should be $1 \rightarrow 2 \rightarrow 4 \rightarrow 3$.

Function Description Complete the function `insertNodeAtPosition` in the editor below. It must return a reference to the head node of your finished list.

`insertNodeAtPosition` has the following parameters:

- head: a `SinglyLinkedListNode` pointer to the head of the list
- data: an integer value to insert as data in your new node
- position: an integer position to insert the new node, zero based indexing

Input Format

The first line contains an integer *n*, the number of elements in the linked list.
Each of the next *n* lines contains an integer `SinglyLinkedListNode[i].data`.
The next line contains an integer *data* denoting the data of the node that is to be inserted.
The last line contains an integer *position*.

Constraints

- $1 \leq n \leq 1000$
- $1 \leq \text{SinglyLinkedListNode}[i].\text{data} \leq 1000$, where `SinglyLinkedListNode[i]` is the *i*th element of the linked list.
- $0 \leq \text{position} \leq n$.

Output Format

Return a reference to the list head. Locked code prints the list for you.

Sample Input

1
2
3
4
5
6

Upload Code as File

Test against custom input

Run Code

Submit Code

Line: 59 Col: 1

Problem Solving

You have earned 5.00 points!
You are now 14 points away from the 1st star for your problem solving badge.

53%16/30

Congratulations

You solved this challenge. Would you like to challenge your friends?

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Next Challenge

Compiler Message

Success

Input (stdin)

Download

1 3
2 16
3 13
4 7
5 1
6 2

Expected Output

Download

1 16 13 1 7

Problema 4- medio

```
1 > #include <bits/stdc++.h> ...
59
60 // Complete the has_cycle function below.
61
62 /*
63  * For your reference:
64  *
65  * SinglyLinkedListNode {
66  *     int data;
67  *     SinglyLinkedListNode* next;
68  * };
69  *
70  */
71 bool has_cycle(SinglyLinkedListNode* head) {
72     SinglyLinkedListNode* slow = head;
73     SinglyLinkedListNode* fast = head;
74
75     while (slow!=NULL && fast!=NULL && fast->next != NULL){
76         slow=slow->next;
77         fast=fast->next->next;
78         if (slow == fast){
79             return 1;
80         }
81     }
82
83     return 0;
84 }
85
86 > int main() ...
```

Practice

Data Structures

Linked Lists

Cycle Detection

Exit Full Screen View

Problem

Submissions

Leaderboard

Discussions

Editorial

A linked list is said to contain a cycle if any node is visited more than once while traversing the list.

Complete the function provided for you in your editor. It has one parameter: a pointer to a Node object named *head* that points to the head of a linked list. Your function must return a boolean denoting whether or not there is a cycle in the list. If there is a cycle, return true; otherwise, return false.

Note: If the list is empty, *head* will be null.

Input Format

Our hidden code checker passes the appropriate argument to your function. You are not responsible for reading any input from stdin.

Constraints

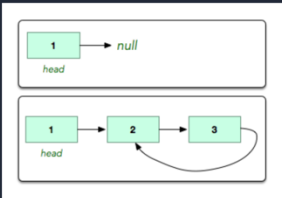
- $0 \leq \text{list size} \leq 1000$

Output Format

If the list contains a cycle, your function must return true. If the list does not contain a cycle, it must return false. The binary integer corresponding to the boolean value returned by your function is printed to stdout by our hidden code checker.

Sample Input

The following linked lists are passed as arguments to your function:



Sample Output

```
0
1
```

Explanation

Line: 59 Col: 1

Upload Code as File

Test against custom input

Run Code

Submit Code

Problem Solving

You have earned 5.00 points!
You are now 9 points away from the 1st star for your problem solving badge.

70%

21/30

Congratulations

You solved this challenge. Would you like to challenge your friends?

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Next Challenge

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin)

Download

```
1 1
2 -1
3 1
4 1
```

Expected Output

Download

```
1 0
```

Problema 5- medio

```

1  #include <bits/stdc++.h>
2
3  using namespace std;
4
5  vector<string> split_string(string);
6
7  // Complete the pairs function below.
8  int pairs(int k, vector<int> arr) {
9      unordered_set <int> set;
10     for (int i=0;i<arr.size();i++){
11         set.insert(arr[i]);
12     }
13
14     long int iR=0;
15
16     for (int j=0;j<arr.size();j++){
17         if (set.find(arr[j]-k) != set.end()){
18             iR++;
19         }
20     }
21
22     return iR;
23 }
24

```

Practice > Algorithms > Search > Pairs

You will be given an array of integers and a target value. Determine the number of pairs of array elements that have a difference equal to a target value.

For example, given an array of [1, 2, 3, 4] and a target value of 1, we have three values meeting the condition: $2 - 1 = 1$, $3 - 2 = 1$, and $4 - 3 = 1$.

Function Description

Complete the pairs function below. It must return an integer representing the number of element pairs having the required difference.

pairs has the following parameter(s):

- k: an integer, the target difference
- arr: an array of integers

Input Format

The first line contains two space-separated integers n and k , the size of arr and the target value. The second line contains n space-separated integers of the array arr .

Constraints

- $2 \leq n \leq 10^5$
- $0 < k < 10^9$
- $0 < arr[i] < 2^{31} - 1$
- each integer $arr[i]$ will be unique

Output Format

An integer representing the number of pairs of integers whose difference is k .

Sample Input

```

5 2
1 5 3 4 2

```

Sample Output

```

3

```

```

84     splits.push_back(input_string.substr(1, min(pos, input_string.length()) - 1 + 1));
85
86     return splits;
87 }
88

```

Line: 1 Col: 1

☐ Upload Code as File
☒ Test against custom input

You have earned 50.00 points!

You are now 29 points away from the 2nd star for your problem solving badge.

59% 71/100

Congratulations

You solved this challenge. Would you like to challenge your friends?

☒ Test case 0

☒ Test case 1

☒ Test case 2

☒ Test case 3

☒ Test case 4

☒ Test case 5

☒ Test case 6

Compiler Message

Success

Hidden Test Case

Unlock this testcase for 5 hacks.

Practice > Data Structures > Arrays > Array Manipulation

For example, the length of your array of zeros $n = 10$. Your list of queries is as follows:

Add the values of k between the indices a and b inclusive:

The largest value is **10** after all operations are performed.

Function Description

Input Format

Constraints

[↑](#) [Upload Code as File](#)

- Test against custom input

Submit Code



31% 131/200

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge