



Day 15: Linked List

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Tutorial

Problem

Submissions

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Discussions

Editorial

Objective

Today we're working with *Linked Lists*. Check out the [Tutorial](#) tab for learning materials and an instructional video!

A *Node* class is provided for you in the editor. A *Node* object has an integer data field, *data*, and a *Node* instance pointer, *next*, pointing to another node (i.e.: the next node in a list).

A *Node insert* function is also declared in your editor. It has two parameters: a pointer, *head*, pointing to the first node of a linked list, and an integer *data* value that must be added to the end of the list as a new *Node* object.

Task

Complete the *insert* function in your editor so that it creates a new *Node* (pass *data* as the *Node* constructor argument) and inserts it at the tail of the linked list referenced by the *head* parameter. Once the new node is added, return the reference to the *head* node.

Note: If the *head* argument passed to the *insert* function is *null*, then the initial list is empty.

Input Format

The *insert* function has **2** parameters: a pointer to a *Node* named *head*, and an integer value, *data*.

The constructor for *Node* has **1** parameter: an integer value for the *data* field.

You *do not* need to read anything from stdin.

Output Format

Your *insert* function should return a reference to the *head* node of the linked list.

Sample Input

The following input is handled for you by the locked code in the editor:

The first line contains *T*, the number of test cases.

The *T* subsequent lines of test cases each contain an integer to be inserted at the list's tail.

```
4
2
3
4
1
```

Sample Output

The locked code in your editor prints the ordered data values for each element in your list as a single line of space-separated integers:

```
2 3 4 1
```

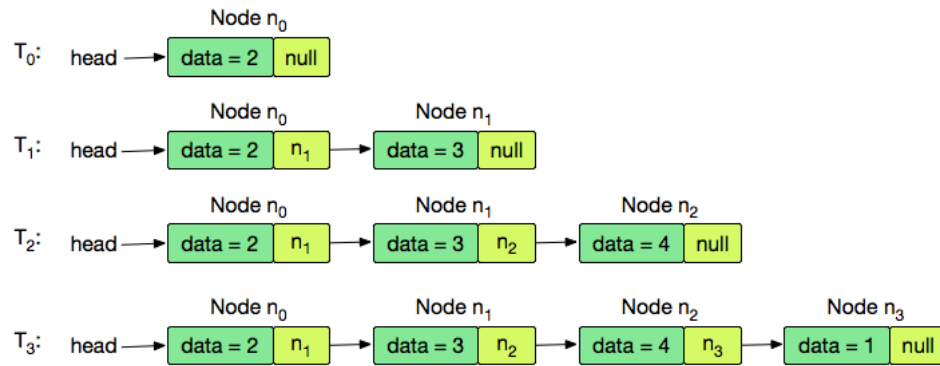
Explanation

T = **4**, so the locked code in the editor will be inserting **4** nodes.

The list is initially empty, so *head* is null; accounting for this, our code returns a new node containing the data value **2** as the *head* of our list. We then

create and insert nodes **3**, **4**, and **1** at the tail of our list. The resulting list returned by the last call to *insert* is **[2, 3, 4, 1]**, so the printed output is 2 3 4 1.

Initial: head → null



Easy

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Current Buffer (saved locally, editable)

Java 8



```

1 ▶ import ↔;
3
4 ▼ class Node {
5     int data;
6     Node next;
7 ▼   Node(int d) {
8       data = d;
9       next = null;
10  }
11 }
12
13 class Solution {
14 ▼   public static Node insert(Node head,int data) {
15       //Complete this method
16 ▼       if (head == null) {

```

```
17         return new Node(data);
18     }
19     if (head.next == null) {
20         head.next = new Node(data);
21     }
22     else {
23         insert(head.next, data);
24     }
25     return head;
26 }
27
```

```
28 public static void display(Node head) {↔}
35
36 public static void main(String args[]) {
37     Scanner sc = new Scanner(System.in);
38     Node head = null;
39     int N = sc.nextInt();
40
41     while(N-- > 0) {
42         int ele = sc.nextInt();
43         head = insert(head,ele);
44     }
45     display(head);
46     sc.close();
47 }
48 }
```

Line: 25 Col: 21

[Upload Code as File](#)[Run Code](#)[Submit Code](#)

Testcase 0 ✓

Congratulations, you passed the sample test case.

Click the **Submit Code** button to run your code against all the test cases.

Input (stdin)

```
4
2
3
4
1
```

Your Output (stdout)

```
2 3 4 1
```

Expected Output

```
2 3 4 1
```

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