Day 15: Linked List

NOVEMBER 30, 2016 ~ GEEKSOLUTIONSITE

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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, , and a *Node* instance pointer, , 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, , pointing to the first node of a linked list, and an integer 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 as the *Node* constructor argument) and inserts it at the tail of the linked list referenced by the parameter. Once the new node is added, return the reference to the node.

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

Input Format

The *insert* function has parameters: a pointer to a *Node* named , and an integer value, .
The constructor for *Node* has parameter: an integer value for the field.

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

Output Format

Your *insert* function should return a reference to the 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 subsequent lines of test cases each contain an integer to be inserted at the list's tail.

```
4
2
3
4
1
```

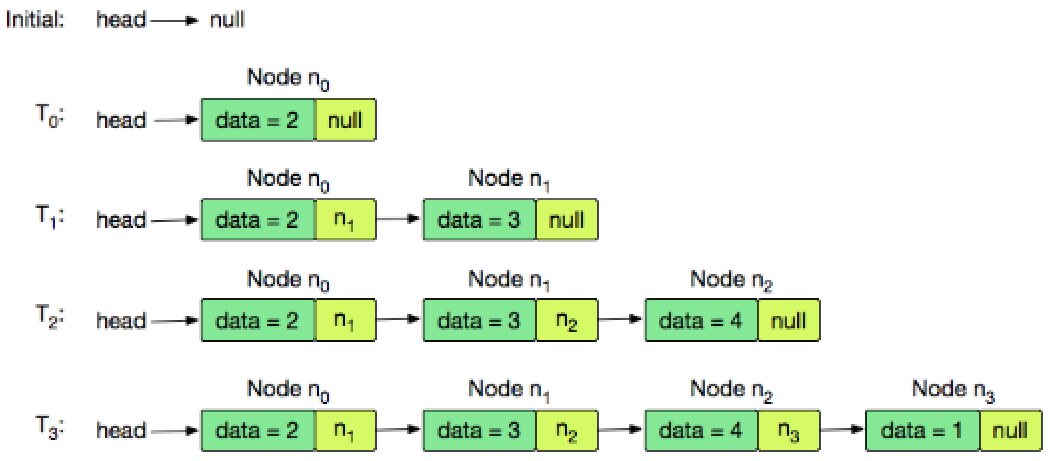
Sample Output

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

, so the locked code in the editor will be inserting nodes.
The list is initially empty, so is null; accounting for this, our code returns a new node containing the data value as the of our list. We then create and insert nodes , , and at the tail of our list. The resulting list returned by the last call to is , so the printed output is `2 3 4 1`.


Initial: head → null
Node n_0
T_0: head → data = 2 | null
Node n_0 Node n_1
T_1: head → data = 2 | n_1 → data = 3 | null
Node n_0 Node n_1 Node n_2
T_2: head → data = 2 | n_1 → data = 3 | n_2 → data = 4 | null
Node n_0 Node n_1 Node n_2 Node n_3
T_3: head → data = 2 | n_1 → data = 3 | n_2 → data = 4 | n_3 → data = 1 | null