

Problem 2816: Double a Number Represented as a Linked List

Problem Information

Difficulty: Medium

Acceptance Rate: 61.21%

Paid Only: No

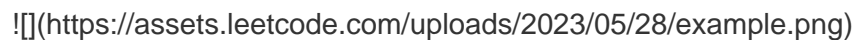
Tags: Linked List, Math, Stack

Problem Description

You are given the `head` of a **non-empty** linked list representing a non-negative integer without leading zeroes.

Return `the head` of the linked list after **doubling** it.

Example 1:



Input: `head = [1,8,9]` **Output:** `[3,7,8]` **Explanation:** The figure above corresponds to the given linked list which represents the number 189. Hence, the returned linked list represents the number $189 * 2 = 378$.

Example 2:



Input: `head = [9,9,9]` **Output:** `[1,9,9,8]` **Explanation:** The figure above corresponds to the given linked list which represents the number 999. Hence, the returned linked list represents the number $999 * 2 = 1998$.

Constraints:

* The number of nodes in the list is in the range `[1, 104]` * `0 <= Node.val <= 9` * The input is generated such that the list represents a number that does not have leading zeros, except the number `0` itself.

Code Snippets

C++:

```
/**
 * Definition for singly-linked list.
 * struct ListNode {
 *   int val;
 *   ListNode *next;
 *   ListNode() : val(0), next(nullptr) {}
 *   ListNode(int x) : val(x), next(nullptr) {}
 *   ListNode(int x, ListNode *next) : val(x), next(next) {}
 * };
 */
class Solution {
public:
    ListNode* doubleIt(ListNode* head) {

    }
};
```

Java:

```
/**
 * Definition for singly-linked list.
 * public class ListNode {
 *   int val;
 *   ListNode next;
 *   ListNode() {}
 *   ListNode(int val) { this.val = val; }
 *   ListNode(int val, ListNode next) { this.val = val; this.next = next; }
 * }
 */
class Solution {
    public ListNode doubleIt(ListNode head) {

    }
}
```

```
}
```

Python3:

```
# Definition for singly-linked list.
# class ListNode:
#     def __init__(self, val=0, next=None):
#         self.val = val
#         self.next = next
class Solution:
    def doubleIt(self, head: Optional[ListNode]) -> Optional[ListNode]:
```