

2. Add Two Numbers

[Question](#)[My Submissions](#)

Total Accepted: **111111** Total Submissions: **512456** Difficulty: **Medium**

You are given two linked lists representing two non-negative numbers. The digits are stored in reverse order and each of their nodes contain a single digit. Add the two numbers and return it as a linked list.

Input: (2 -> 4 -> 3) + (5 -> 6 -> 4)

Output: 7 -> 0 -> 8

题目的意思就是给定两个链表，把这两个链表看做两个整数，链表中的每一个数该整数一个位。例如 2->4->3代表整数 342. 5->6->4代表整数 465. 利用链表实现这两个数的相加 $342 + 465 = 807$ ，要求返回一个新的链表，7 -> 0 -> 8. 只需要注意如何进位即可。利用一个carry变量保存两数相加的进位， $carry = (a + b) // 10$, 最后 然后 在该位上保存 $(a+b) \% 10$. carry 留给下一位。

代码

```
7  # Definition for singly-linked list.
8  # class ListNode(object):
9  #     def __init__(self, x):
10 #         self.val = x
11 #         self.next = None
12 #
13 # @param ListNode l1
14 # @param ListNode l2
15 # @return ListNode
16
17 class Solution(object):
18     def addTwoNumbers(self, l1, l2):
19         head = aux = ListNode(0)
20         carry = 0
21
22         while l1 or l2 or carry > 0:
23             a = b = 0
24
25             if l1:
26                 a = l1.val
27                 l1 = l1.next
28
29             if l2:
30                 b = l2.val
31                 l2 = l2.next
32
33             sum = a + b + carry
34             carry = sum // 10
35             aux.next = ListNode(sum % 10)
36             aux = aux.next
37
38         return head.next
39
40
```