两数相加

给定两个非空链表来代表两个非负数，位数按照逆序方式存储，它们的每个节点只存储单个数字。将这两数相加会返回一个新的链表。

可以假设除了数字 0 之外，这两个数字都不会以零开头

例：

输入：(2 -> 4 -> 3) + (5 -> 6 -> 4) 输出：7 -> 0 -> 8 原因：342 + 465 = 807

输入：(7 -> 1 -> 6) + (5 -> 9 -> 2) 输出：2 -> 1 -> 9 原因：617 + 295 = 912

(https://leetcode-cn.com/problems/add-two-numbers/description/)

```java
public ListNode addTwoNumbers(ListNode l1, ListNode l2) {
    int carry = 0;
    ListNode dummy = new ListNode(-1);
    ListNode p = dummy;
    while (l1 != null && l2 != null) {
        int val = (l1.val + l2.val + carry) % 10;
        carry = (l1.val + l2.val + carry) / 10;
        p = appendToTail(p, val);
        l1 = l1.next;
        l2 = l2.next;
    }
    while (l1 != null) {
        int value = (l1.val + carry) % 10;
        carry = (l1.val + carry) / 10;
        p = appendToTail(p,value);
        l1 = l1.next;
    }
    while (l2 != null) {
        int value = (l2.val + carry) % 10;
        carry = (l2.val + carry) / 10;
        p = appendToTail(p,value);
        l2 = l2.next;
    }
    if (carry != 0) {
        p.next = new ListNode(carry);
    }
    return dummy.next;
}

public ListNode appendToTail(ListNode head, int value) {
    head.next = new ListNode(value);
    head = head.next;
    return head;
}
```