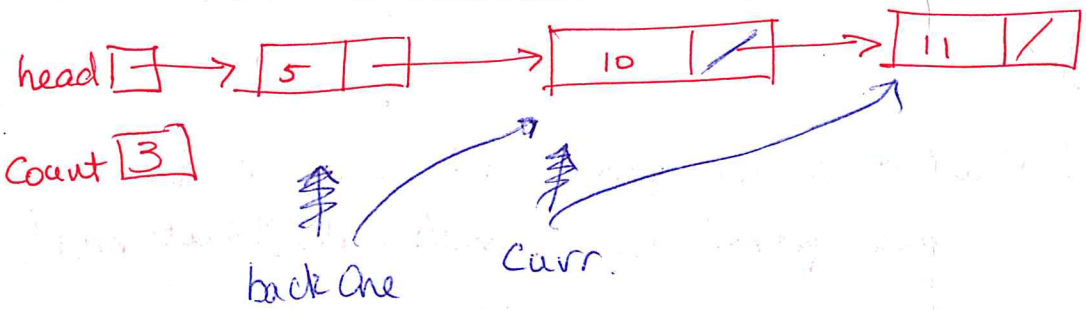
Quiz # 2 January 2014 Student Number:_____

1. Consider the Node class projected on the screen and the following class:

```
public class SingleLinkedList {
      Node head;
      int  count;

      public SingleLinkedList() {
            head = null;
            count = 0;
      }

      public void addBack (int val) { // assume a correct implementation }
      public void addFront (int val){ // assume a correct implementation }
      public int removeBack() { // implement this in Q2 }
}
```

Draw the list that results from the following code. You need only show the final list.

```
SingleLinkedList l = new SingleLinkedList();

l.addFront(10);
l.addFront(5);
l.addBack(11);
```



2. Implement the `removeBack` method.

```
public int removeBack() {
    // List Empty?
    if (head == null) return 0; // or some other value

    // Only one node in list
    if (head.getNext() == null) {
        int temp = head.getValue();
        head = null;
        count--;
        return temp;
    }

    // Otherwise
    Node curr = head.getNext();
    backOne = head;
    while (curr.getNext() != null) {
        backOne = curr;
        curr = curr.getNext();
    }
    // Now backOne points at 2nd last node.
    count--;
    backOne.setNext(null);
    return curr.getValue();
}
```

head.next

head.next.value

head.next.next

backOne.next = null;