Compare Two Singly-Linked Lists

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Question

Given the following definition of a singly linked list, compare the data in the two lists to check if they are equal. Implement a method which takes two pointers head1 and head2 and returns 1 if they are equal, 0 if they are not.

```
Node is defined as
class Node {
 int data;
 Node next;
}
```

Explanation and Algorithm

Your algorithm should iterate through both linked lists simultaneously and check each node against each other. If they do not match, then the linked lists are not the same and 0 should be outputted. If you reach the end of both lists simultaneously, then they are the same and 1 should be outputted.

Hints

1. How do you compare two entries? Traverse both lists simultaneously.
2. What do you do if two entries do/do not match?
3. How do you know when to stop traversing the lists? You have reached a null node.

Code

```
int CompareLists(Node headA, Node headB) {
```

```
   while(headA != null && headB != null){
         if(headA.data != headB.data)
               return 0;
         headA = headA.next;
         headB = headB.next;
   }

   if(headA == null && headB == null)
      return 1;

   return 0;

}
```

Big O analysis

O(n): n is the smallest number of the number of nodes belonging to either of the linked lists.

Resources

Question taken from hackerrank.com.