Daniel Avila April 10th, 2020 Section 19
Lab 9 - Singly-Linked-List
Description: Using code and working backwards to determine what is
Description: happening in the code and why it is used.

1.) What do you think this program is doing?

The program is building a node list where the values inserted are replaced by old values which creates the traverse of the list because the "new" values of head are the top/first values. Then it will display those numbers from the head, down to the last number, or first number that was an input.

2.) Take note of line 8. An overloaded constructor has been added to the struct. What is the benefit of having a constructor for a struct? At what line is this constructor being called?

The benefit of having a constructor is being able to initialize the nodes and evidently it will be able to create the list in different ways. Either with the input or the head.
LINE:(29) head = new ListNode(input, head);

3.) Analyze the loop in lines 25-30. Describe the steps that are happening.

The loop makes the "Enter a num" repeat as much as the number the user input. The overloaded constructor makes it where the new value is assigned to input so it would have the latest number displayed first in the loop where it displays the list. Old values are assigned to head because it is assigned to just the input.

4.) Analyze line #29, describe everything that is happening here.

The overloaded constructor makes it where the new value is assigned to input so it would just be head = new ListNode(input). The head as an argument doesn't exist for the first number because it's itself. So succeeding numbers take input and the previous take head.
EX) input: 2 ,3; constructor: head = new ListNode(2); --- head = new ListNode(3,2);

5.) Analyze lines 33-46, what is this portion of the program doing?

This part is doing the traversing of the list where the newest input in creating the list is the first value when displaying the final list of nodes. The while loop ends displaying the list when the node is equal to null. sum1 is adding up all the values the previous two sum to the new sum so it keeps track of the total sum and finally displays the sum on line 46.

6.) What is the role of *myCurrentNode, line #33?

The line is playing the role of input where the user input the numbers within the list and it is assigning it to an address where the value is at using the syntax of the overloaded constructor inside the struct.

7.) Analyze the loop in lines 39-44. Describe the steps that are happening.

The while loop is displaying the values of the list from newest to oldest. It is adding up the sum, by ways of 2, meaning it is using the previous' two input numbers sum to the next number so that it doesn't lose track within the addresses.

8.) Analyze line #44, what is the purpose of this statement?

The line's purpose is to assign the old input to the newer input so that it keeps progressing to through the number of input numbers the user decided to use.