# CMSI 2120 ~ 2021-09-29

# Data Structures Challenge 01 in Java

You have two integer numbers represented by linked lists, in which each node in each list represents one single digit of one number. The digits are stored in reverse order, such that the head of the list contains the least significant digit [the “one’s place”] of the number. The numbers may or may not be the same length, i.e., there may be one list that has more digits than the other.

Your task is to use your “IntLinkedList” class you developed in class to write a program called “LinkedListAdder.java” that adds the two numbers and returns a third linked list containing their sum. You can pick your numbers and hard-code them into your program if you wish, but they must be *at least* four digits each.

EXAMPLE:

INPUT: [**4** → **7** → **5** → **3** → **6**] and [**7** → **2** → **9** → **8** → **1** → **8**]

OUTPUT: [**1** → **0** → **5** → **2** → **8** → **8**]

EXTRA CHALLENGE:

Take the two numbers from the command line as strings of digits, then break them apart into arrays and add them into the linked lists. Be sure to error check that the digits are all numbers.

EXAMPLE:

**java LinkedListAdder 47536 729818**