# CSE108 – Computer Programming Laboratory

# Lab #12

**Date**: Monday April 29, 2019

Handin: A student with number 20180000001 should hand in three separate files named 20180000001_part1.c, 20180000001_part2.c, 20180000001_part3.c, etc. for this lab.

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**Part 1.** [40pts] Write a function which takes an 8 bit binary number in a linked list and converts to the decimal equivalent of that number. Assuming your linked list is type "binarylist", the function prototype would be something like the following:

```
int bin2int(binarylist * bn)
```

Implement another function that reads a binary number from the user, inserts each binary entries in a linked list and calls "bin2int" to calculate the decimal equivalent and prints the result. The function prototype is:

```
void bin2int_io()
```

An example run of this function would generate the following output:

```
Enter your binary number: 0000111
Decimal equivalent of your number: 7
```

**Part 2.** [30pts] You are asked to write a function that modifies a given linked list in the following manner. The function prototype is:

```
void reverse_nodes_between_n_to_m (struct Node * ll, int n, int m)
```

where the given linked list in "ll" is modified such everything between the nth and mth entries (inclusive) are reversed. For example, if the input linked list has the following entries

1 2 3 **4 5 6 7 8** 9 10

and the function is called with n=3 and m=7, upon return the linked list will become:

1 2 3 **8 7 6 5 4** 9 10

**Part 3.** [30pts] Write a program that takes the a set of numbers from the user. The function stores these numbers in a linked list and calculates sum of numbers. You are expected to define the nodes and linked list structure. An example run of your program should generate the following output:

```
Input numbers: 1 2 3 4 5 6 7 8 9 10
Sum of these numbers: 55
```