TCES 201
Introduction to Computer Programming
Homework 2 – Control Structures
10 Points

This homework tests your understanding of the topics covered in the third week related to C Programming – Control Structures.

1. Write a program to print m Fibonacci numbers where m is the input number of Fibonacci numbers that need to be printed. Print each number. The formula for Fibonacci is $fib_n = fib_{n-1}+fib_{n-2}$.

   Here's a sample output:

```
Enter the number of Fibonacci numbers: 5
1: 1
2: 1
3: 2
4: 3
5: 5
```

2. Write a program to input a set of integer numbers, count and sum the positive numbers, and also count and sum the negative numbers. It should then print the count and sum of all positive numbers and the count and sum of all negative numbers.

   Here's a sample output:

```
Enter a number: 5
Do you want to enter another number? y
Enter a number: -5
Do you want to enter another number? y
Enter a number: 10
Do you want to enter another number? y
Enter a number: 20
Do you want to enter another number? y
Enter a number: -20
Do you want to enter another number? n
You entered 3 positive numbers and their sum is 35
You entered 2 negative numbers and their sum is -25
```

3. (2 Points) Challenge Work - (Printing the Decimal Equivalent of a Binary Number) Input an integer (5 digits or fewer) containing only 0s and 1s (i. e., a "binary" integer) and print its decimal equivalent. [Hint: Use the remainder and division operators to pick off the "binary" number's digits one at a time from right to left.]

   Here's a sample output:

```
Enter binary integer: 1101
Decimal equivalent of 1101 is 13
```

Submission Instructions: Submit the code on Canvas under hw2 Submission link. Submit the C source code files with the names fib.c and numbers_sum_count.c (and decimal.c, if attempting challenge work).

Each program must contain a header in the following format.

```
/*      Menaka Abraham
        CES201
        Autumn 2014
        This program prints a simple Hello World to the console.
*/
```