**ENGR 102**

**Lab 6Bonus [100 Points]**

**ALL** of your programs perform the following general tasks:

* Print what the program does to the screen
* Use descriptive prompts telling the user what to enter from the keyboard
  + Including units, if relevant
* Store input in appropriately named variables
* Convert the input to a number if you plan to perform mathematical operations with the input value
* Perform necessary decisions/procedures/calculations and store results in appropriately named variables
* Output results to the screen with proper labels

**Using your new-found knowledge of loops**

Please write code for each of the following problems and save each to the appropriate filename.

1. **Program 1: Computing Sums and Products: [60 Points]**

Write code to *retrieve a positive integer from the keyboard* and perform the following two calculations:

1. Find the **sum** of all integers from 0 to the number entered. **[15\* 2 (for and while) = 30 Points]**
2. Find the **product** of all integers from 1 to the number entered. **[15\* 2 (for and while) = 30 Points]**

Do each of these calculations in two ways: first with a for loop and then with a while loop.

1. **Program 2: Finding Prime Numbers: [40 Points]**Write code that finds and counts the number of prime numbers between 2 and 100. The output should look similar to below:

2 is prime

3 is prime

4 is not prime

…

…

100 is not prime

There are \_\_\_\_\_\_\_ number of primes between 2 and 100