Week 04
Looping

Lab 04 - Multiples of 3 and 5

The following problem is taken from Project Euler.
If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23.

Find the sum of all the multiples of 3 or 5 below 1000.

Expected Output:

```
Multiples of 3 and 5
====================
Enter in a max value, and we'll sum up all multiples of 3 and 5.
Max Value: <max_value>
Answer: <answer>
```

Homework 04 - Even Fibonacci Numbers

The following problem is taken from Project Euler.
Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be:

1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...

By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.

Tips:

1) To test and make sure your program works, why not start with a lower number. If you were to add up all even numbers whose value doesn't exceed 100, you'd get 44. If you add all even numbers whose value doesn't exceed 200, you'd get 188.

Bonus Objectives:

Instead of a maximum value of four million, how about 3 billion?

Tips:

1) The values an int can store is typically between -32,767 and 32,767.
2) The values a long int can store is typically between -2,147,483,647 and 2,147,483,647.
3) Look up unsigned int, By eliminating negative values we can almost double our range. Use this to solve 3 billion (that's 3 followed by 9 zeros).