Hunter Poole
CSCI 155 HW7, Problem 2

1. Program will have user enter an integer between 1 and 100, anything else will cause the loop and program to quit. This integer is first tested to see if it is an odd or even number; here an appropriate message is displayed, displayed only in the main function. Then the sum of all the numbers up to and including the entered number is calculated and displayed. So if the user enters the number 4, the sum of numbers from 1 to 4 would yield 10. This program needs to call two separate methods, one to determine if number is odd or even, and the other to calculate the sum of the numbers. Both methods will have one parameter and both should return something back, which is the answer the main will deal with. Remember to design your functions so that they are logically coherent and follow the guidelines given in class and examples.

Three Step Analysis:

A. Take user input as int. Loop while between 1-100.
    a. Call method1 to determine if the entered number is odd or even.
        i. Return result to main
B. Main outputs if input int is odd or even
    a. Call method2 to calculate the sum of all integers up to and including the entered integer
        i. Return result to main
C. Main outputs sum of numbers
D. Quits if input is not 1 - 100.

INPUT	**OUTPUT**	**EQUATIONS**

Integer	Integer “is odd” // Integer “is even”	**if** (Number >= 1 && Number <= 100)
		    while (Number >= 100 && Number <= 100)
		        [code, etc]
		        if (Number < 1 || Number > 100)
		            write “ERROR”
		        end if
		    end while
		else
		    write “ERROR”
		end if-else

	Sum of integers up to and including entered integer	**if** ((N / 2) == 0)
		    return “ is even”

	“ERROR”	**write** (Number + OddOrEven)
		Sum = (N * (1 + N)) / 2

E. Limits / Constraints:
    a. Must use methods for all math. (Method for OddOrEven and method for SumOfInts)
    b. Only handles integers 1-100. Quits on anything else

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OddOrEven (int N)

    if (N % 2 == 0)
        return " is even"
    else
        return " is odd"
    end if-else

end OddOrEven

SumOfInts (int N)

    Sum = (N * (1 + N)) / 2
    return Sum

end SumOfInts

Main

    write "Enter an integer 1 - 100 --> "
    read Number

    if (Number >= 1 && Number <= 100)
        while (Number >= 100 && Number <= 100)

            write (Number + OddOrEven(Number))
            write "Sum of integers 1 - ", Number, " is: ", SumOfInts(Number)

            write "Enter an integer 1 - 100 --> "
            read Number

            if (Number < 1 || Number > 100)
                write "ERROR: Must enter an integer 1 - 100"
            end if
        end while
    else
        write "ERROR: Must enter an integer 1 - 100"
    end if-else
```