Assignment 2: Loops

Due Date	Mar 6, 11:55pm
Weighted Total of Final Grade	15%

This assignment contains two parts. In part one, you'll make a guessing game. In part two, you'll make a counting program. Both programs will require user input, the use of a loop, and some basic error handling. Additionally, you'll need to research an appropriate function for generating random numbers in C for part one.

Part One: Guessing Game (10%)

Growing tired of all those "free" games with more ads than fun, your friend turns to you for entertainment. "You're a 1337 programmer, build me something better!", they request. You confidently tackle this task, with the goal of putting EA out of business.

Write a program that accepts two inputted integers from the user: a minimum value, and a maximum value. The inputted numbers should be accepted at the same time.
For example:

```
Enter a min, followed by a max number, separated by a space: 2 500
```

Ensure both inputted numbers are greater than 0. If they are not, print and error an exit your program early.

Ensure the max number is greater than your min number by at least 30, otherwise, print an error and exit your program early.

Ensure the max number is not greater than your min number by more than 1000, otherwise, print an error and exit your program early.

Generate a random integer number between the min value, and the max value. Note this random number should be different every time you run your program (even with the same input).

Ask your user to input an integer number between the inputted min and max numbers (they will be trying to guess the random number).

- If they guess the number correctly, print "Winner" and quit.

- If the guess is less than the random number 20 or more, print "A lot higher"
- If the guess is less than the random number by 10 or more and less than 20, print "Higher"
- If the guess is less than the random number by less than 10, print "A little higher"

- If the guess is more than the random number by 20 or more, print "A lot lower"
- If the guess is more than the random number by 10 or more and less than 20, print "Lower"
- If the guess is more than the random number by less than 10, print "A little lower"

Continue to prompt the user for a new guess, and print the appropriate messages until the correct number is chosen. If the user inputs "-1" as their guess, print "Quitter" and quit.

Your program should be named guess.c.

Part Two: Skip Counting (5%)

Your younger sibling has math homework - again. They're learning skip counting, and has turned to you for help - again. Write a program for them, and maybe they'll be able to *skip* learning this.

Write a program that prompts the user for the following input (all integers):
- Start number
- End number
- Skip number

If skip number is negative, ensure end number is less than start number. Otherwise, print an error and exit the program early.

If skip number is positive, ensure end number is greater than start number. Otherwise, print an error and exit the program early.

If skip number is 0, print an error and exit the program early.

Ensure the difference between start and end numbers is greater than skip number.

Once all the numbers are inputted, your program should print out all numbers between the start number and end number counting by the skip number.

For example, if the start number was 2, and the end number 10, and the skip number was 3, you would print:
2
5
8

The print output should be inclusive of the start number, and exclusive of the end number. If the start number was 1, and the end number 3, and the skip number was 1, you would print:
1
2

Your program should be named skip.c.

Submission Expectations

Submissions should be uploaded to the *Assignment 2* Dropbox on the course website. You may submit both files together in a .zip, or upload them as two separate files. If you upload them separately, ensure they're part of the same submission.

Your .c files must compile without any errors or warnings on the No Machine environment. If your .c file produces errors during compilation, you will receive a 0 for that section. Your programs will be compiled with:
- `gcc -Wall -std=c99 guess.c`
- `gcc -Wall -std=c99 skip.c`

Your .c files should include a comment at the top with your full name, and email.

For full marks, your code should follow the style guide outlined for our course.

Late assignments will not be accepted. All submissions must be made in the course website's Dropbox folder before the deadline. No submissions will be accepted through email.