Homework 2: Single Character I/O

**Assigned**: January 30th, 2018 **Due**: February 6th, 2018

Make a subdirectory "hw2" of your cs240 folder for this assignment. Copy the starter files from /courses/cs240/f17/kamaral/GROUP/hw2 to your hw2 subdirectory.

**Part 1: Echo**

In the echo.c file, write code for taking a single character as input and producing it as output using the functions we learned in class. Make sure it does not output anything other than the single character and a new line in response (unless there is no input).

The main function is already provided for you, but you must write the code that goes inside.

Make sure that when your program outputs, that you also add a newline character (\n) to the end of the format string. This is mainly for appearances, but there will be times where appearances are part of the program’s objectives.

Also, make sure to check for the end of input when you run the program just in case input is never given. You can test to make sure you’re doing this correctly by using CTRL+D in the command line. This will close the input stream so that the program can no longer receive input.

In the case that end of input is reached, print an error message of your choosing.

When you compile echo.c to a program, name the program “echo”.

**Part 2: Counting Echoes**

Before you begin coding, read this part in its entirety and then write some pseudocode for this program and store it in count.txt.

In the count.c file, write code for reading multiple characters. This program should read characters indefinitely (until CTRL+D is pressed or the end of the world).

The count program should count how many times it has seen the same character in a row and print that number when it sees a different character.

Input is going to look something like this: aaaabbbcccceeeeeddddffffffff<CTRL+D>

Output is going to look something like this: 4 3 4 5 4 8

Be aware that spaces count as characters and that certain keyboard keys that you don’t expect will also count as characters.

When you compile count.c to a program, name the program “count”.

**Turning in the Assignment**

Follow the typescript procedure outlined in Homework 1.

* start the typescript
* ls -la the directory
* cat echo.c, count.c, count.txt
* compile echo
* run echo
  + Give an example on some input
* compile count.c
* run count
  + Give an example on some input (feel free to use the example above)
* Exit the typescript

In your hw2 folder, there should be the following deliverables:

* echo.c
* count.c
* count.txt
* echo
* count
* typescript

Make sure to include your name in the comments of the source files.

I do NOT need a hardcopy.