CS 100 Lab Six – Fall 2017

Create a directory called **lab6** on your machine using **mkdir lab6** and move into that directory with **cd lab6**

Complete the following problems. For this lab, all input is given using command-line arguments.

1. Name this program **average.c** – The program looks at all the command-line arguments, which all represent valid integers, and prints the average of all values seen on the command line. There will always be at least one integer entered on the command line. Sample executions are shown below:

```
./a.out 10 20 30 25 15 5 20 40
The average of these 8 numbers is 20.625000
./a.out 99 55 11 -6 600 32
The average of these 6 numbers is 131.83333
```

2. Name this program **split.c** – The program takes two command line arguments, the name of an input file that contains a set of integers and an integer.
   - If the input file does not exist then print an error message and exit the program.
   - If the file exists, then it is guaranteed to only contain valid integers.
   - Your program should split this input file into two separate files, one (named **less.txt**) containing integers that are less than the threshold value specified on the command line, and one (named **more.txt**) containing the integers that are greater than the threshold value.
   - Both your output files, **less.txt** and **more.txt**, should print one number per line.
   - Note that you do not write any occurrences of the threshold value itself to either file.

```
./a.out myData 100

./a.out noSuchFile 0
The file specified, noSuchFile, does not exist
```

3. Name this program **count.c** – The program takes a single command line argument, the name of an input file.
   - Your program should confirm the input file exists (exit with an appropriate error message if it does not).
   - If the file exists, then count the number of upper-case and lower-case letters in the file.
   - Print your counts to standard output.

contents of myData
The Quick Brown FoX Jumps Over the LAZY Old doG. Roll TIDE 1831!
./a.out myData Uppercase = 18, lowercase = 28

Submit your lab

First, on your local machine, compress your **lab6** directory into a single (compressed) file.
Second, once you have a compressed file that contains your three **lab6** programs, submit that file to Blackboard.