Lab 0 Design Document

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1) Goal

The First goal is to set up Ubuntu using VM which I just had to install as well. I had to also figure out how and where to write code on Ubuntu as well as compile and run it. The second is to learn the lab format for CSE 130 by writing a simple program that does the same thing as the Unix cat command. The third goal is to ensure that I'm ready for this with this assignment acting as a "self-test" on my C knowledge.

2) Assumptions

I assume I can use system calls to open, close, and write files. This would be made possible by the #include <unistd.h>. I'm also assuming that we will use "./dog" to call the function rather than "cat".

3) Design

My general approach to this assignment was to simply open the files and read them with the system call functions, and write them directly after reading them. First I'd initialize variables for my counter, and for 32 blocks of memory storage. I'd have to check if there is exactly one argument, because If no files are specified on the command line, dog should just copy standard input to standard output until it runs out of input, just like the installed version of cat does. If there are multiple arguments (file inputs), I will go through the files with a while loop. If the file does not exist, I will throw the same error that the Cat function would throw, and break out of the while loop. If the file exists, I would read and write the file, close the file, and move onto the next file until I run out of files to read.

4) Pseudocode

```
//Initialize variables and memory
//Check how many arguments are given
// if there is exactly one file
If there is exactly one argument (./dog)
        read input
        write out input to output
If files are given{
        //Go through while loop to see how many files are given and for each file
                while file exists{
                        Read file
```

Write file
Increment to next file
}
else{
//print error
“ dog: file name: No such file or directory”
if dog runs into an error with a file, the program should print an error message to standard error (not standard output!) and skip the file, handling the remainder of the files.
}
}