Assignment 1 Report COMP 3300

I confirm that I will keep the content of this assignment confidential. I confirm that I have not received any unauthorized assistance in preparing for or writing this assignment. I acknowledge that a mark of 0 may be assigned for copied work.

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As I utilized the POSIX API, I could not use printf() and scanf(). For this reason my program uses read() and write() to communicate with both the user and the file. I handled file opening errors on both the source and destination files, outputting the corresponding text if the open was not successful. Fortunately, this was easy to implement as system calls return negative numbers if the operation fails.

If the source file fails to open, either because of the file not already existing or some other technical errors, the terminal will output ‘The source file failed to open.’ before terminating the program. When opening the destination file, I utilized access() and create() system calls. The two functions work in compliment, as creat() by itself opens a file whether it exists or not. While access checks if it already exists, where if this is the case, it outputs ‘File already exists’ before exiting the program. This way the destination file can only be successfully created if it is not a pre-existing file.

Finally, a read loop is implemented. Reading in 10,000 bits at a time then writing them to the new file.

Example runs are as follows:

1. The file villareal has ‘gilly suit’ contained in it, therefore this string should be in the new file ‘tilbury’ as it doesn’t already exist in the current directory. This is the case in execution as seen below.

A screenshot of a computer screen

Description automatically generated

1. Now if I attempt to run the file by giving the first prompt (name of the source file), a name that doesn’t already exist in the current directory, in this case ‘bil’, it should and will output a failure to open a file or the file doesn’t exist in that directory, and then the program will abort.

A screenshot of a computer screen

Description automatically generated

1. Lastly, we can give the correct source file, a file that already exists in the directory compounded with a pre-existing destination file in the directory which should not happen, in this case ‘tilbury’. As can be seen the output is that the source file already exists and then the program will abort.

A screenshot of a computer screen

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