Justin Herndon 02/21/2023

**Programming Assignment 2**

I used my raspberry Pi 4 as my coding environment to compile and test my code. This time I used gcc and clang to compile my code. I experimented with clang this time in order to get more warnings and better quality of life checks for my code.

Now to talk about the shell program and some of my struggles coding the program. I didn’t realize at first that you provided code for making the string manipulation easier so that is why I ended making a tokenizing system to make string manipulation easier. I also had inconsistency with certain loops I was using. The while loop that I am running inside the tokenize\_cmd function which in your file the != NULL was not properly terminating until I tested the condition again a couple of hours later after I had already rewritten that segment. I also ran into inconsistency with the enums variables of cd and history and strcmp function that I mentioned in the comment. I also ran out of time to implement the file redirect operators properly, because I wasn’t sure how to correctly implement the redirect and the example test cases do not assume that only operator is being used and the position of the operators in the command, which my program makes that assumption in its current state. I did try to use some practices that I learned about at my coop, because I want to strive to write better and more readable code that doesn’t need as many comments to explain what is happening in the file.