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CSC 412

Assignment 2 Report

My algorithm for exploring the director hierarchy starts by initializing all the variables I will need. I assign the target word to the first passed argument and the path starting point to the second passed argument. I then define a function that will traverse the directories. Within this function, I start by incrementing the counter for the number of levels as each time this is called it enters a new directory. Then I define a for loop that passes through the contents of that directory. As it navigates through that directory if it finds a subdirectory it increments the counter for the number of folders and calls the traversal function again with the new starting point being that subdirectory. If it finds a text file it increments the files counter and adds the location of that file to the array of tracked txt files. After all the calls to the traversal function finish the script echos the desired information with the appropriate counters. The script finishes by compiling the target search C program and running it with the target and the array of txt file locations as arguments.

The C program for finding occurrences of the target word starts by initializing all the variables required for the program to operate such as the counter the target word and an empty word holder. The algorithm then enters a loop that iterates through all the files passed into the program. Through each iteration of the loop, every file is read word by word and compared to the target word to see if they match. If they do the counter is iterated up one until the scan hits the end of the file and the loop brings the program to the next file. Once all the files have been parsed for the target word the program prints and returns the final count.