

Problem 1 - In the main function, I have a variable that holds the total line count and one that holds the path which gets a value from the user. For the variable that holds the total line count gets its value by calling the traverse function with the path as a parameter. In the traverse function I check if the argument passed is a txt file using regex which is all done in another function. If it is a text file then I get the count of the txt file using another function, which just simply counts the number of '\n' aka lines in a txt file and returns it, that value gets returned again but from the traverse function. After I check if the directory exists if it doesn't I just simply return 0. Then I use a while loop that loops through all the directory entries until there are none left. After I make sure the program doesn't try to explore the current and parent directory. After I construct the new directory path that will be explored by passing it as an argument back to the traverse function to start the DFS recursion of traversing through the directory.

Problem 2 - First I open the two binary files, then check if they were able to be opened if not then, I exit the program. After I read the dimensions of both binary files, then I make sure they are the same dimension if not I exit, I also check if dimension is greater than 100 if it is then I exit. After I read the elements of both binary files into a 3d matrix separately, called "matrix1" and "matrix2" respectively after I close both binary files them. After I open a file called "result.bin" to write in binary. After I write the dimensions of the result_matrix into the "result.bin". After I use three for loops to iterate through matrix1, matrix2, and result_matrix, during the loop I perform element-wise multiplication on matrix1 and matrix2 while storing it into result_matrix and within the same loop I also write the result_matrix into the "result.bin" file, and I also print how the math looks. Then at the end I close the result file.