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CS307 - PA4 Report

In my implementation, I called 2 functions in the main function. In total, my code consists of 4 functions including the main function.

The first function that I used is “load_db”. This function takes one parameter, a database file, which is database.txt in the case of PA4. It opens the file, and if the opening is successful, it reads the content. While reading, it stores the information in an array of person. Here, person is a struct that has the features gender, first name, and last name. Finally, it closes the file.

The second function that I used is “traverse_dir”. This function takes one parameter, a path, that is going to be traversed within the function. First, it checks whether the path name is a directory. If yes, it opens the directory. The while loop compares the name of each entry with the strings ‘.’ and ‘..’, and skips the entry if it matches either of these strings. Because they represent the current directory and the parent directory and do not need to be traversed. If the entry is not ‘.’ or ‘..’, the loop constructs a subpath by concatenating the path of the current directory with the name of the entry. The subpath is then passed to the traverse_dir function, which recursively traverses the directory. But, if the path name is not a directory, then it makes another check for the extension of the file. If it is a txt file, traverse_dir calls another function, correct_txt_content.

So, the third function that I used is “correct_txt_content”. This function takes one parameter, a path, that is going to be corrected within the function. First, it opens the file such that there will be both read and write operations. Then, it makes a check to prevent the corrections in database.txt. It takes the whole content of the file to a char array which is going to be used to keep track of the corrections. A for loop is created to traverse the database array that is created within the load_db array. Here, inside the for loop, it checks whether the current first name is in the content of the file. If yes, it checks the title and the last name, in that order. If there is a mistake, it corrects the content according to the information taken from database.txt. While correcting, I used fseek and fputs to indicate the position of the correct version and overwrite it. Also, there is an inner while loop right after the initialization of the for loop which is created to achieve the continuation of the corrections for each person in the database.txt. If there are no matches left, it quits the while loop. Finally, it deallocates the content and closes the file.

The fourth function that I used is the main function and I already explained it at the beginning of my explanation.