CS307 PA4 Report

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main program initially opens the database file. Then it passes the file pointer with current directory (".") to traverseFiles function. After this function, it closes database file and return 0.

traverseFiles is a recursive function that traverses every directory and files inside given directory. If given directory name is not a directory, it returns. Otherwise, it reads all the directories and files inside given directories. Then, appends their name to basepath with "/" among them and stores it as a path. Then it calls the recursion with newly created path.

Also, it checks the file names that has ".txt" extension at the end of the file name. If it finds such named file. It opens that file and calls CorrectTxt function with that file and Database file. After function is executed, it calls fsync() and syncs file in the memory with stored file in the disk. Then it closes that file.

CorrectTxt function gets databasefileptr with file pointer that will be corrected. It traverses every word of the file and calls GetGenderAndSurname function with parameters databaseptr and word. If this function finds the name inside database, it returns gender and surname in dynamic array that stores 2 strings. If it could not find it in database as name, first string of dynamic array will become "-1", this will be used to determine if it is found or not.

If first string is not "-1" (which means word is found in database as name), CorrectTxt function checks the title first while changing offset by -4. If title corresponds to gender (stored in first index of dynamic array), it goes to next step. Else, it corrects title. In the next step, fseek() sets offset value to the beginning of the surname. Surname is checked with the second string in dynamic array that stores surname in database. If surname is correct, it does nothing. Else, it overwrites wrong surname with correct one (2^{nd} index of DA).

Before getting the next word, strings in dynamic array and dynamic pointers are deallocated for preventing memory leak. Then function goes the next step of the loop with getting new word.