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Programming Assignment 4

File Systems

In this programming assignment to get the information from database.txt in the directory which is assumed as root directory, and correcate all txt files in that directory including the ones in subdirectories, I use **a struct named person** and 3 functions which are **handle_database()**, **correct_txt()**, and **corrector()** in my corrector.c implementation.

How C implementation with these files works:

Handle_database():

This funciton takes filename and line_num arguments. It reads the file with given name in the root directory, write the content of the file to a dynamically allocated array of persons(this is the struct that consists of the desired information which are gender, name, and surname) and return this array. This function also update the line_num argument (passed as reference) to the number of lines in that file to ease of using iterations which should be as many as the person name later.

Correct_txt():

This function takes arguments filename(a txt file), person_list, and line_num. Person_list is used to get true information about a person. Line_num is used to iterate over person_list. This functions opens the function with given name. For each person in person_list, reads the file, find all matching names and correct all the Mr., Ms., and surname related to these names by using fseek() and fpus() functions.

Corrector():

This function takes a directory name, person_list, and line_num. This is the function that recursively trace all the contents of a directory.

This function opens a directory, changes current directory to this directory, get all the entry's one by one in this directory:

If an entry is a txt file not database.txt file in the root directory:

> **Correct_txt()** is called with filename, person_list, and line_num.

Else if the entry is a directory:

> **Correcter()** is called with directory name, person_list, and line_num. **(recursive call)**

At the end this functions changes current directory to ".." directory which is one level top directory and then closes the directory that this function opens.

Main():

As it can bee seen from the above explanations of the functions that are used in the corrector.c implementation, the main function creates person_list and line_num and assign person_list to it the handle_database() function which is called with appropriate parameters(“database.txt” and line_num), and so form the person_list.

Main fucntion then call the corrector() function with the parameters “.”(take current directory as root directory), person_list, and line_num.

Then all the necessary operations and corrections done by this function.

With this 3 functions and call of the handle_database() and corrector() in the main, my corrector.c implementation achieves to solve the problem and correct all the files with the given information.