Programming Assignment (PA) -5

(File Systems)

Report

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Rebah Özkoç

00029207

In my program I used file system commands to solve the problem. Firstly, I created a function to create a database. This function created an array of pointers to user structs.

User struct has this schema.

typedef struct user{

    char\* name;

    char\* surname;

    char\* gender;

} user;

For every line of the database.txt I created a struct and stored a pointer to it in an array called db. Then I created a function which is called correction(filename) to correct wrong files. This function loops the file char by char. It uses the fseek command to change current offset by one during the loop. The pseudo code for this loop is like this:

for (int i= 0; i < length of the file; i++):

for every user in database array:

buffer = read file from the i until len of user’s name.

if buffer == user’s name:

go one char forwads by fseek

change the surname with user’s surname

go 4 chars + length of the name back from the current pos. by fseek

change the pronoun

Then to traverse the root recursively I created a function visit\_dirs(path). This function takes a directory as the argument. It opens the directory by opendir command. Then, for every item in the directory if it is a .txt file, corrects it by correction function. Else if the filename is not “.” Or “..” and if it is a directory, it calls the visit\_dirs function on this path recursively.

In the main function I opened the current directory and called the correction function on the .txt files except the database.txt file. I called the visit\_dirs function on the directories. Then at the end I freed the memory of the db array.