

EE442 Operating Systems Homework1 Report

In this assignment, we were asked to implement a program which lists the files in a directory and write the list to another file.

For this purpose, I implemented 3 functions which can be seen below.

```
int is_regular_file(const char *path);
char** path_returner(char* folder_path, FILE* f);
char* concat(const char *s1, const char *s2);
```

`is_regular_file` simply checks whether the argument corresponds to a file or another folder.

`path_returner` takes its argument directory, then concatenates the directory string with the file directories withinside of it. Then `is_regular_file` is executed to see whether it is a file or folder. If it is a file, its directory is written to the list file. If it is a folder, the directory is again executed on the `path_returner` recursively until it finds some files.

`concat` function is implemented because there is no default string concatenating operation in C.

My program takes the input directory with `(char **argv)`. I buffered this directory and then, created `"listing.list"` to make the writing operation.

Then, I run `path_returner` function which lists all the files in a directory recursively.

Example:

I created the same file directory example with the one given in Homework definition. This directory schematic can be seen in Figure 1.

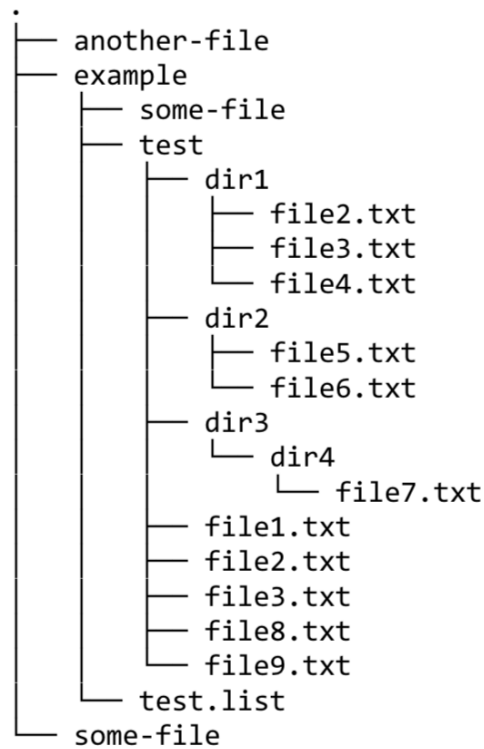


Figure 1. Example File Directory

After running my code, the following output from the terminal was observed in Figure 2.

```
mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1
mrdogan7@mrdogan7-VirtualBox:~/Desktop$ ls
brightside EE442_HW1 hw442 test-20180408T114007Z-001.zip
mrdogan7@mrdogan7-VirtualBox:~/Desktop$ cd EE442_HW1/
mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1$
mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1$ ls
main.c test
mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1$ gcc main.c -o listing
mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1$
mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1$ ./listing ./test
./test/dir1 folder is found
Digging more..

./test/dir2 folder is found
Digging more..

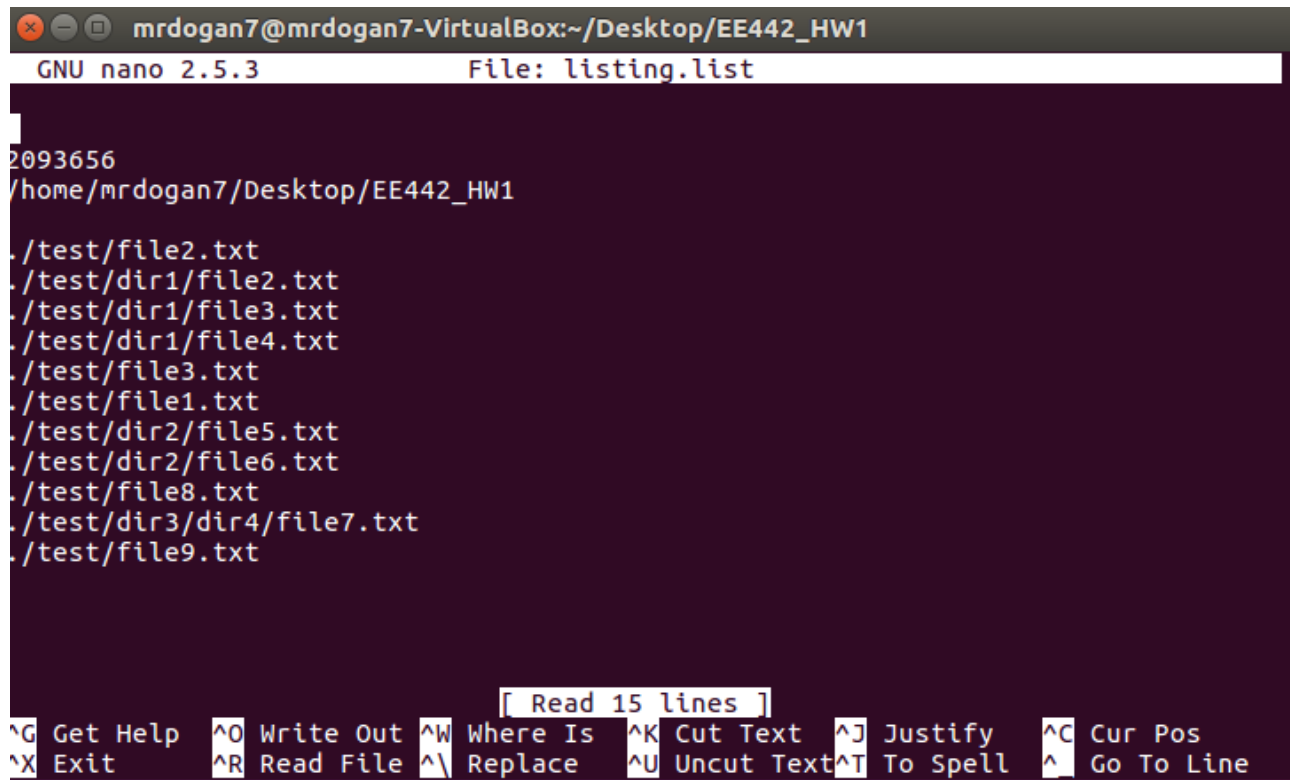
./test/dir3 folder is found
Digging more..

./test/dir3/dir4 folder is found
Digging more..

mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1$
```

Figure 2. Terminal Output

All the file directories are written to the file "listing.list". The screenshot of the file "listing.list" can be seen from below in Figure 3.



The screenshot shows a terminal window with the title bar "mrdogan7@mrdogan7-VirtualBox:~/Desktop/EE442_HW1". The window displays the GNU nano 2.5.3 editor editing the file "listing.list". The file's content is as follows:

```
2093656
/home/mrdogan7/Desktop/EE442_HW1

./test/file2.txt
./test/dir1/file2.txt
./test/dir1/file3.txt
./test/dir1/file4.txt
./test/file3.txt
./test/file1.txt
./test/dir2/file5.txt
./test/dir2/file6.txt
./test/file8.txt
./test/dir3/dir4/file7.txt
./test/file9.txt
```

At the bottom of the terminal, a status bar shows the command "Read 15 lines" and a list of keyboard shortcuts: ^G Get Help, ^O Write Out, ^W Where Is, ^K Cut Text, ^J Justify, ^C Cur Pos, ^X Exit, ^R Read File, ^\ Replace, ^U Uncut Text, ^T To Spell, and ^_ Go To Line.

Figure 3. listing.list file

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