CMPE 230 Systems Programming

Homework 2

1- PROBLEM DESCRIPTION

In this project, we are expected to implement a file utility program called **filelist** that will traverse directories and report path names of files that satisfy some search criteria. The program will be implemented in Python. It will be invoked as follows on the console:

filelist [options] [directory list]

If no directory list is give, the default will be the current directory. If no option arguments are given, pathnames of all files will be printed by the program.

2- PROBLEM SOLUTION

Firstly, we parse the arguments from command line and push them into a list named "arguments". Then, we extract directories from arguments and push them into a new list called "dirlist". While doing this action, if no directory is given we only push the current directory to the list as mentioned in the description.

After that, we traverse the directories and find the files which has properties that we want in a function named "dirTraverse()". In this function, we check whether the files in these directories are satisfied with our arguments. Also, we hold statistics like number of total file visited, total size of visited files etc. While checking the file satisfies the given restrictions, we declare functions named: before(), after(), bigger(), smaller(), match().

Moreover, we also have zipper() and delete() methods to fulfil zip and delete operations. Details of our methods are described below and commented in our source code

FUNCTIONS

parseArg(): In this method, we parse the arguments from command line and return a new list which holds the parsed arguments.

handleDir(): In this method, we extract directories from arguments and returns the list of directories; default is current directory.

dirTraverse(): In this method, we traverse directories and finds files which satisfy our given restrictions and returns file list and statistics of program

getName(): In this method, we divide our file name into 2 parts which are name up to extension and extension .

fSize(): In this method, we calculate the size of given file and returns it.

before(): Checks whether the given file is modified before the given date time.

after(): Checks whether the given file is modified after the given date time.

bigger(): Checks whether the size of given file is bigger than the given size. If the given size ends with particular characters such as K,M,G, we multiply the given size by 2^10,2^20,2^30 respectively.

smaller(): Checks whether the size of given file is smaller than the given size. If the given size ends with particular characters such as K,M,G, we multiply the given size by 2^10,2^20,2^30 respectively.

delete(): Deletes the files which are in given directories and satisfy the given conditions.

escape(): Replaces spaces and quotes for path and returns safe path.

zipper(): Zips the files which are in given directories and satisfy the given conditions.

match(): Checks whether the given file's name matches with given regex.

sortedList(): Sorts the files according to their names.

3- HOW TO COMPILE?

Since we wrote our Python code in Python2 format, we run our python code in ubuntu terminal by;

python filelist.py [options] [directory lists]

After these commands in terminal, results are printed to console.

4- CONCLUSION

In the beginning, we had difficulties in parsing the arguments from the command line. Then, we learn the one of python built-in functions "argumentParser" and it helps us a lot. After that, fulfilling the project requirements get easier and we easily obtain the desired results.

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