

PROJECT DOCUMENTATION

CMPE 230

PROJECT II

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1)Problem Description:

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.

2)Problem Solution:

We have written a program in Python that takes options which consists of some of the following options:

“-match <pattern>”

“-delete”

“-before datetime”

“-after datetime”

“-bigger <int>”

“-smaller <int>”

“-zip <zipfile>”

“-duplcont”

“-duplname”

“-stats”

“-nofilelist”

and directory list which consist of zero or more directories and then outputs the desired files.

First of all, we create *MyFile* class to initialize a file and its data as a variable. In that class, we wrote comparable function to use it while a list which consist of all of the files. All instances have path, size, name, date and owner parts.

We created itList which will contain all of the files.

We take all the arguments, options and directory list, then we separate them as 2 different deques(dirList and optList). We traverse all the directories in the dirList

recursively. While we are doing that we create a *myfile* instance, for every file we reach the *datas*(path, size, name, date and owner) of it and then we write it to its corresponding parts. Also, we append all the instances to *itList*.

Every option is a condition for our program. When we see one of them we do the necessary tasks.

When we see “-before datetime” option we search all of the *itList*, and find the files which are last modified before the given date and just hold them in *itList*.

When we see “-after datetime” option we search all of the *itList*, and find the files which are last modified after the given date and just hold them in *itList*.

When we see “-bigger <int>” option we search all of the *itList*, and find the files which are bigger size than the given size and just hold them in *itList*.

When we see “-smaller <int>” option we search all of the *itList*, and find the files which are smaller size than the given size and just hold them in *itList*.

When we see “-nofilelist” option we don’t print the file list.

When we see “-zip <zipfile>” option after doing all other options, it zips the remaining files to the current directory with the given name.

When we see “-delete” option after doing all other options, it deletes the remaining files.

When we see “-match <pattern>” option after doing all other options, it holds the filenames which matches the given pattern at *itList*.

When we see “-duplname” option, first we sort the *nameList* thanks to our comparable method in *MyFile* class. Then we print the output in the expected format (with “-----”).

When we see “-duplcont” option, first we sort the *nameList* thanks to our comparable method in *MyFile* class. Then we put together the files which have same content. Then we print the output in the expected format (with “-----”).

When we see “-stats” option, we use 7 different counter for calculate the desired statistics, one of them is only used when -duplname option is given, two of them are only used when -duplcont option is given, remaining of them are used all the time. Then we print them.

3)Output:

```
mbk@mbk:~/Desktop/230_python/ass2$ python filelist /home/mbk/Desktop/ASD/
/home/mbk/Desktop/ASD//CMPE240/PS/ps5/testbench_for.v
/home/mbk/Desktop/ASD//CMPE240/PS/ps5/testbench.v
/home/mbk/Desktop/ASD//CMPE240/PS/ps5/Reg4.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS4/testbench_block_nonblock.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS4/block_nonblock.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003/testbench_and_behavioral_level.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003/testbench_decoder_2_4.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003/and_behavioral_level.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003/testbench_mux_4_1.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003/decoder_2_4.v
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003/mux_4_1.v
/home/mbk/Desktop/ASD//CMPE240/PS/ps2/testbench_gate.v
/home/mbk/Desktop/ASD//CMPE240/PS/ps2/mymodule_gate.v
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/2_12_2015400081_2015400036_PRE2.zip
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/source.v
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/CMPE240_Exp2_Prem_template çözömlü.pdf
/home/mbk/Desktop/ASD//230_python/berke/b_file
/home/mbk/Desktop/ASD//230_python/berke/s_file
/home/mbk/Desktop/ASD//230_python/berke/c_file
/home/mbk/Desktop/ASD//230_python/berke/.c_file.swp
/home/mbk/Desktop/ASD//230_python/berke/d_file
/home/mbk/Desktop/ASD//230_python/berke/a_file
/home/mbk/Desktop/ASD//230_python/ass2/as2
/home/mbk/Desktop/ASD//230_python/ass2/deneme
/home/mbk/Desktop/ASD//230_python/ass2/hw2notes.pdf
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003.zip
/home/mbk/Desktop/ASD//CMPE240/PS/PS4.zip
/home/mbk/Desktop/ASD//CMPE240/PS/ps5.zip
/home/mbk/Desktop/ASD//CMPE240/PS/ps2.zip
/home/mbk/Desktop/ASD//CMPE240/ass2/output.vvp
/home/mbk/Desktop/ASD//CMPE240/ass2/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass2/source.v
/home/mbk/Desktop/ASD//CMPE240/ass2/TimingDiagram.vcd
/home/mbk/Desktop/ASD//CMPE240/ass5/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass5/source.v
/home/mbk/Desktop/ASD//CMPE240/ass1/output.vvp
/home/mbk/Desktop/ASD//CMPE240/ass1/2_12_2015400081_2015400036_PRE2.zip
/home/mbk/Desktop/ASD//CMPE240/ass1/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass1/source.v
/home/mbk/Desktop/ASD//CMPE240/ass1/rapor.pdf
/home/mbk/Desktop/ASD//CMPE240/ass1/TimingDiagram.vcd
/home/mbk/Desktop/ASD//CMPE240/ass1/rapor.docx
/home/mbk/Desktop/ASD//CMPE240/ass4/output.vvp
/home/mbk/Desktop/ASD//CMPE240/ass4/2_12_2015400081_2015400036_PRE4.zip
/home/mbk/Desktop/ASD//CMPE240/ass4/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.docx
/home/mbk/Desktop/ASD//CMPE240/ass4/source.v
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.pdf
/home/mbk/Desktop/ASD//CMPE240/ass4/TimingDiagram.vcd
/home/mbk/Desktop/ASD//words
/home/mbk/Desktop/ASD//grep
mbk@mbk:~/Desktop/230_python/ass2$
```

```
total size of printed files: 3006030
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -match te* -stats /home/mbk/Desktop/ASD/
testbench_for.v
testbench.v
testbench_block_nonblock.v
testbench_and_behavioral_level.v
testbench_decoder_2_4.v
testbench_mux_4_1.v
testbench_gate.v
testbench.v
testbench.v
testbench.v
testbench.v
testbench.v
number of visited files: 52
visited files' total size: 2943333
number of files we print: 12
total size of printed files: 3006030
mbk@mbk:~/Desktop/230_python/ass2$
```

```
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -bigger 2K -duplcont -stats /home/mbk/Desktop/ASD/ /home/mbk/Desktop/230_python/
/home/mbk/Desktop/ASD//230_python/berke/.c_file.swp
/home/mbk/Desktop/230_python/berke/.c_file.swp
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/2_12_2015400081_2015400036_PRE2.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/2_12_2015400081_2015400036_PRE2.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass4/2_12_2015400081_2015400036_PRE4.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/CMPE240_Exp2_Prem_template çözümü.pdf
/home/mbk/Desktop/ASD//CMPE240/ass1/rapor.docx
-----
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.docx
-----
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.pdf
-----
/home/mbk/Desktop/ASD//CMPE240/ass4/TimingDiagram.vcd
-----
/home/mbk/Desktop/ASD//230_python/ass2/as2
-----
/home/mbk/Desktop/230_python//ass2/as2
-----
/home/mbk/Desktop/230_python//ass2/filelist
-----
/home/mbk/Desktop/ASD//grep
-----
/home/mbk/Desktop/ASD//230_python/ass2/hw2notes.pdf
/home/mbk/Desktop/230_python//ass2/hw2notes.pdf
-----
/home/mbk/Desktop/230_python//ass2/myzip1.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass2/output.vvp
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/output.vvp
-----
/home/mbk/Desktop/ASD//CMPE240/ass4/output.vvp
-----
/home/mbk/Desktop/ASD//CMPE240/PS/ps2.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/rapor.pdf
-----
/home/mbk/Desktop/ASD//CMPE240/ass5/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass4/testbench.v
-----
/home/mbk/Desktop/ASD//words
number of visited files: 63
visited files' total size: 5748995
number of files we print: 25
total size of printed files: 5732494
number of unique name: 20
number of unique size: 4085869
mbk@mbk:~/Desktop/230_python/ass2$
```

```
/home/mbk/Desktop/ASD//grep
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -bigger 1K -smaller 4K /home/mbk/Desktop/ASD/
/home/mbk/Desktop/ASD//230_python/ass2/as2
/home/mbk/Desktop/ASD//CMPE240/PS/PS_003.zip
/home/mbk/Desktop/ASD//CMPE240/PS/ps5.zip
/home/mbk/Desktop/ASD//CMPE240/ass2/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass2/source.v
/home/mbk/Desktop/ASD//CMPE240/ass5/testbench.v
/home/mbk/Desktop/ASD//CMPE240/ass1/output.vvp
/home/mbk/Desktop/ASD//CMPE240/ass4/testbench.v
mbk@mbk:~/Desktop/230_python/ass2$
```

```
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -bigger 2K -duplname -stats /home/mbk/Desktop/ASD/ /home/mbk/Desktop/230_python/
/home/mbk/Desktop/ASD/230_python/berke/.c_file.swp
/home/mbk/Desktop/230_python/berke/.c_file.swp
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/2_12_2015400081_2015400036_PRE2.zip
/home/mbk/Desktop/ASD//CMPE240/ass1/2_12_2015400081_2015400036_PRE2.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass4/2_12_2015400081_2015400036_PRE4.zip
-----
/home/mbk/Desktop/ASD//CMPE240/ass1/assignment1/CMPE240_Exp2_Prem_template çözümlü.pdf
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.docx
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.pdf
/home/mbk/Desktop/ASD//CMPE240/ass4/CMPE240_Exp4_Prem_template.pdf
/home/mbk/Desktop/ASD//CMPE240/ass4/TimingDiagram.vcd
/home/mbk/Desktop/ASD//230_python/ass2/as2
/home/mbk/Desktop/230_python/ass2/as2
/home/mbk/Desktop/230_python/ass2/filelist
/home/mbk/Desktop/ASD/grep
/home/mbk/Desktop/ASD/230_python/ass2/hw2notes.pdf
/home/mbk/Desktop/230_python/ass2/hw2notes.pdf
/home/mbk/Desktop/230_python/ass2/myzip1.zip
/home/mbk/Desktop/ASD/CMPE240/ass2/output.vvp
/home/mbk/Desktop/ASD/CMPE240/ass1/output.vvp
/home/mbk/Desktop/ASD/CMPE240/ass4/output.vvp
/home/mbk/Desktop/ASD/CMPE240/PS/ps2.zip
/home/mbk/Desktop/ASD/CMPE240/ass1/rapor.docx
/home/mbk/Desktop/ASD/CMPE240/ass1/rapor.pdf
/home/mbk/Desktop/ASD/CMPE240/ass5/testbench.v
/home/mbk/Desktop/ASD/CMPE240/ass4/testbench.v
/home/mbk/Desktop/ASD/words
number of visited files: 63
visited files' total size: 5748995
number of files we print: 25
total size of printed files: 5732494
number of unique name: 17
mbk@mbk:~/Desktop/230_python/ass2$
```

```
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -before 20180403T220000 -after 20180303T220000 -delete /home/mbk/Desktop/ASD/
/home/mbk/Desktop/ASD/CMPE240/PS/ps5/testbench_for.v
/home/mbk/Desktop/ASD/CMPE240/PS/ps5/testbench.v
/home/mbk/Desktop/ASD/CMPE240/PS/ps5/Reg4.v
/home/mbk/Desktop/ASD/CMPE240/PS/PS4/testbench_block_nonblock.v
/home/mbk/Desktop/ASD/CMPE240/PS/PS4/block_nonblock.v
/home/mbk/Desktop/ASD/230_python/berke/b_file
/home/mbk/Desktop/ASD/230_python/berke/s_file
/home/mbk/Desktop/ASD/230_python/berke/c_file
/home/mbk/Desktop/ASD/230_python/berke/.c_file.swp
/home/mbk/Desktop/ASD/230_python/berke/d_file
/home/mbk/Desktop/ASD/230_python/berke/a_file
/home/mbk/Desktop/ASD/CMPE240/PS/PS_003.zip
/home/mbk/Desktop/ASD/CMPE240/PS/PS4.zip
/home/mbk/Desktop/ASD/CMPE240/PS/ps5.zip
/home/mbk/Desktop/ASD/CMPE240/ass2/output.vvp
/home/mbk/Desktop/ASD/CMPE240/ass2/testbench.v
/home/mbk/Desktop/ASD/CMPE240/ass2/source.v
/home/mbk/Desktop/ASD/CMPE240/ass2/TimingDiagram.vcd
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -before 20180403T220000 -after 20180303T220000 -delete /home/mbk/Desktop/ASD/
mbk@mbk:~/Desktop/230_python/ass2$
```

```
mbk@mbk:~/Desktop/230_python/ass2$ python filelist -before 20180403T220000 -after 20180303T220000 -nofilelist -stats /home/mbk/Desktop/ASD2/
number of visited files: 55
visited files' total size: 3780905
number of files we print: 18
total size of printed files: 38410
mbk@mbk:~/Desktop/230_python/ass2$
```

4)Conclusion

We successfully completed our task. Our program can handle all of the combinations of the possible options and directory list. We are able to do all the things we are expected to do.

5)To Run The Program

Write “python filelist” [options] [directory list] to command line, then press enter. It will output the expected output to command line.