

CMPE 230

Spring 2018 – Homework 2

File utility program

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1. 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 has been implemented in Python. It will be invoked as follows on the console:

```
filelist [options] [directory list]
```

The arguments in [] are optional. If they are not given, the default action will be carried out. If no directory list is given, the default will be the current directory. If no option arguments are given, pathnames of all files will be printed by the program.

2. Project Implementation

We implemented the code in 4 stage. Those are,

- ✓ Reading arguments
- ✓ Elimination files according to some given criteria
- ✓ Applying delete, and zip options if they are given
- ✓ Determine Listing Format

2.1. Reading arguments

We take arguments from system. We iterate the arguments which is given by user and determine whether it is an option or it is a path. If there is no path we set the path to current directory. Then we go to the second stage which is elimination stage.

2.2. Elimination files according to some given criteria

Firstly we get all files from the paths which are given by user. Then we eliminate the files in some criteria which are as follows:

- Before
- After
- Smaller
- Bigger
- Match

2.3. Applying delete, and zip options if they are given

After we eliminate the files in some criteria we have a result files list. Then if delete option is given, we delete all the files in the list. If zip option is given we do the following: Firstly we create a temporary folder. Then we put every file into this folder. Finally we zip all the files taking care of the file names if any duplication name exists and delete the temporary folder.

2.4. Determine Listing Format

Firstly we sort the final list which will be printed by using bubble sort. There are some listing formats we are expected to apply in this project as follows:

- Duplname

If duplname options is given we print the files that have the same name back to back in sorted order. And we put "-----" after every group of files.

- Duplcontent

If duplcontent options is given we print the files that have the same content back to back in sorted order. And we put "-----" after every group of files.

- If no one above is given, we print the files without putting "-----"

- Stats

We print traversal statistics at the end of files listing output. The statistics will be as follows:

- total number of files visited,
- total size of files visited in bytes,
- total number of files listed,
- total size of files listed in bytes.

If -duplcont option is given, additionally, the following information will be printed:

- total number of unique files listed,
- total size of unique files in bytes.

If -duplname option is given, additionally, the following information will be printed:

- total number of files with unique names

3. How to Run

1. Open the directory of `filelist.py` in terminal,
2. Write `python filelist.py [options] [directory list]`

Example: `python filelist.py -bigger 10M zip myzip.zip ~/Documents`

4. Conclusion

The target was to traverse directories and report path names of files that satisfy some search criteria. It was a great Project to understand how Python works and how it is coded. So it was really helpful.

Also, studying the project in a 2 people-team was a great experience. We believe that, some projects can be understood better if they are assigned as the teamwork.