

Assignment 1

CS 241: Systems Software Lab. Basic Linux Commands

Note: Most of the outputs should be a single line command even if its long by piping the output suitably. Example, if you are asked to list files and folders and display those files/folder have the word cse, the command would be

```
ls | grep "cse"
    and not
ls > files.txt
grep "cse" files.txt
```

1. Recursively traverse a directory and find all unique extensions in it with their count.
2. Given a file, extract out the unique vowels, unique consonants from it. The extracted vowels should be stored in vowels.txt and consonants in consonants.txt. Also a new file should be made that contains all mis-spelled words in the file (Use aspell). Answer would be 3 commands (one for vowels, one for consonants and one for mis-spelled words). See q2.txt
3. Recursively traverse a directory rename all file names so that all spaces are replaced by underscores.
4. Given a text file, extract the content enclosed within dollars. Within the dollars there can be special symbols, numbers too. See q4.txt

E.g., Input:

If m is mass, a is the acceleration then force F is given by $F = m * a$

Output

m

a

F

$F = m*a$

5. Scan the ~/Downloads recursively and find the largest files in ~/Downloads folder and sort them by size. Find top 10 files. So if u have 200 files in your ~/Downloads folder, I need the top 10 largest files along with their sizes and path.
6. Scan the ~/Downloads recursively. You need to create an archive (Only tar) such that each archive is of 50mb each. So if your folder is size 205mb the output should have 5 files, 4 of 50mb each and 5th of 5mb. Use tar command to do the following. After taring extract the content in a new folder.
7. ISO images can be locally mounted in Linux. Just like you mount the iso images in windows using Dameon tools/poweriso. Write a command to **mount** an iso image in linux.
8. You have a folder in ~/Downloads {~ is alias for home}with lots of files and folders scattered. This consists of various files of different extensions. Scan the folder Downloads recursively and copy only the .pdf files within various directories to ~/pdfs
9. You are given a set of paragraphs with line breaks. For each paragraph you need to join the line, so that they form a single long line. (On terminal type the command nl q9.txt to get the difference) Check q9.txt