name: Fiorella Alarcon class: cis106 semester: spring 22

# Lab 4 The Linux Filesystem

## Question 1
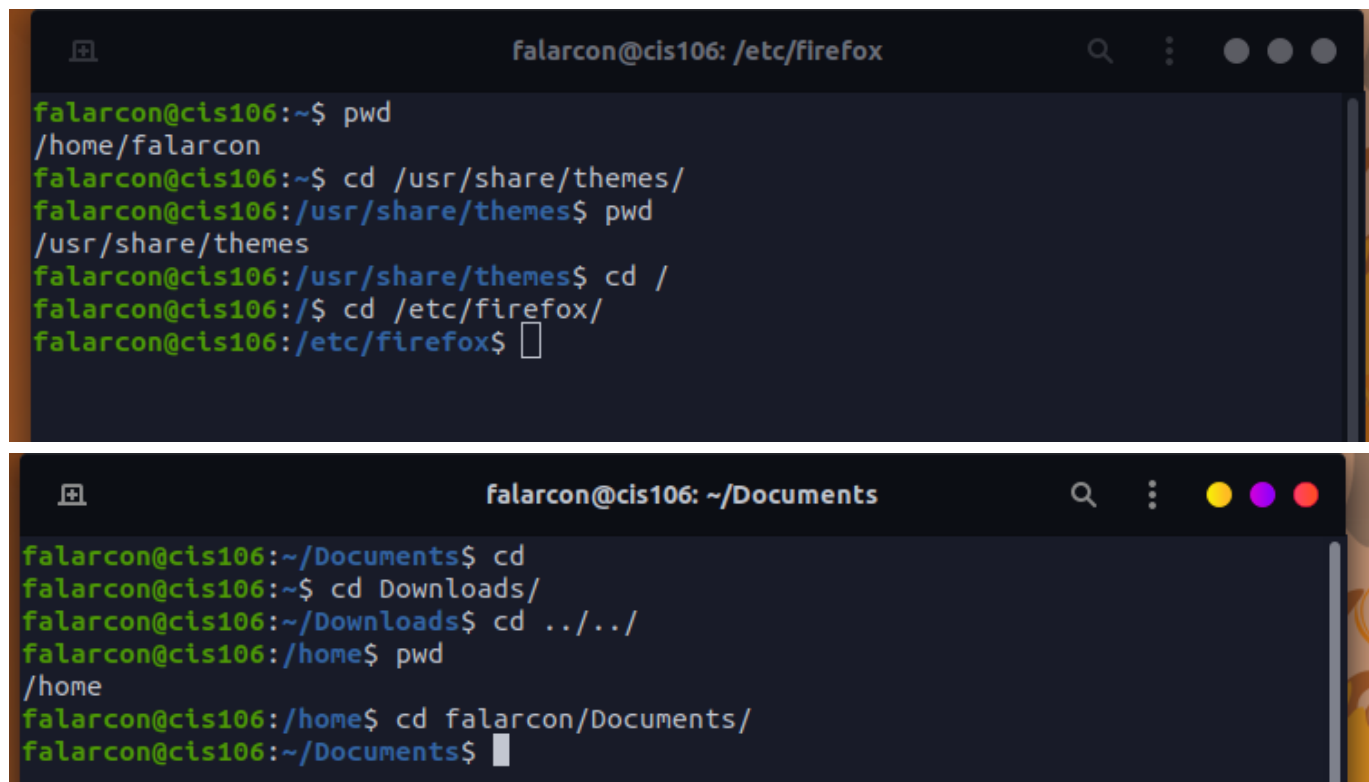
Table 1

| Directory | Function |
|---|---|
| bin | essential commands |
| dev | device files |
| etc | system configuration files |
| home | user home directories |
| media | mount point for removable media, such as DVDs and floppy disks |
| opt | add-on software packages |
| proc | kernel information, process control, system hardware information. |
| srv | information relating to services that run on the system |
| usr | software not essential for system operation, such as applications |
| var | dedicated to variable data, such as logs, databases, websites, and temp spool files that persist from one boot to the next |

Table 2

| Command | What it does | Syntax | Example |
|---|---|---|---|
| cd | changes the current directory | `cd` + `destination` | `cd` + `$HOME` |
| pwd | displays current working directory | `pwd` | `pwd` |
| ls | displays all the files inside a given directory | `ls` | `ls` + `-a` |

## Question 2

```
              田                    falarcon@cis106: /etc/firefox        Q    ⋮    ● ● ●

falarcon@cis106:~$ pwd
/home/falarcon
falarcon@cis106:~$ cd /usr/share/themes/
falarcon@cis106:/usr/share/themes$ pwd
/usr/share/themes
falarcon@cis106:/usr/share/themes$ cd /
falarcon@cis106:/$ cd /etc/firefox/
falarcon@cis106:/etc/firefox$ ☐
```

```
              田                    falarcon@cis106: ~/Documents         Q    ⋮    ● ● ●

falarcon@cis106:~/Documents$ cd
falarcon@cis106:~$ cd Downloads/
falarcon@cis106:~/Downloads$ cd ../../
falarcon@cis106:/home$ pwd
/home
falarcon@cis106:/home$ cd falarcon/Documents/
falarcon@cis106:~/Documents$ ▊
```

## Question 3

```
                        falarcon@cis106: ~/lab4files          Q    :    ● ● ●

falarcon@cis106:~$ cd /usr/share
falarcon@cis106:/usr/share$ ls /home/falarcon/lab4files/
countries.json  document.docx   helloWorld.c   sample.xls    Ubuntu.pdf
csvfile.csv     globe.avi       Linux.pdf      Tux.png       website.html
falarcon@cis106:/usr/share$ cd ~/lab4files/
falarcon@cis106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 falarcon falarcon  20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 falarcon falarcon 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 falarcon falarcon 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 falarcon falarcon 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 falarcon falarcon   76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 falarcon falarcon 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 falarcon falarcon 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 falarcon falarcon  42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 falarcon falarcon 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 falarcon falarcon 135K Feb 22 14:16 website.html
falarcon@cis106:~/lab4files$ ls -lhS
total 6.5M
-rw-rw-r-- 1 falarcon falarcon 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 falarcon falarcon 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 falarcon falarcon 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 falarcon falarcon 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 falarcon falarcon 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 falarcon falarcon 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 falarcon falarcon  42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 falarcon falarcon  20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 falarcon falarcon 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 falarcon falarcon   76 Feb 22 14:18 helloWorld.c
falarcon@cis106:~/lab4files$
```

```
                        falarcon@cis106: ~/lab4files          Q    :    ● ● ●

falarcon@cis106:~/lab4files$ ls -lhSgGi
total 6.5M
2626026 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
2626028 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
2626031 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
2626032 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
2626030 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
2626035 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
2626027 -rw-rw-r-- 1  42K Feb 22 14:10 Tux.png
2626029 -rw-rw-r-- 1  20K Feb 22 14:16 countries.json
2626034 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
2626033 -rw-rw-r-- 1   76 Feb 22 14:18 helloWorld.c
falarcon@cis106:~/lab4files$ ls -Xr
sample.xls   Ubuntu.pdf   countries.json   document.docx   helloWorld.c
Tux.png      Linux.pdf    website.html     csvfile.csv     globe.avi
falarcon@cis106:~/lab4files$
```

# Question 4

```
                    ⊞                    falarcon@cis106: /etc              🔍   ⋮   🟡 🟣 🔴

falarcon@cis106:/$ cd /etc/
falarcon@cis106:/etc$ tree ~/lab4files/
/home/falarcon/lab4files/
├── countries.json
├── csvfile.csv
├── document.docx
├── globe.avi
├── helloWorld.c
├── Linux.pdf
├── sample.xls
├── Tux.png
├── Ubuntu.pdf
└── website.html

0 directories, 10 files
falarcon@cis106:/etc$ 
```

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 ⊞                         falarcon@cis106: ~/Downloads                🔍  ⋮  🟡 🟣 🔴

falarcon@cis106:~$ cd ~/Downloads/
falarcon@cis106:~/Downloads$ tree ../lab4files/ -fph
../lab4files
├── [-rw-rw-r--  20K]  ../lab4files/countries.json
├── [-rw-rw-r-- 277K]  ../lab4files/csvfile.csv
├── [-rw-rw-r-- 746K]  ../lab4files/document.docx
├── [-rw-rw-r-- 725K]  ../lab4files/globe.avi
├── [-rw-rw-r--   76]  ../lab4files/helloWorld.c
├── [-rw-rw-r-- 2.5M]  ../lab4files/Linux.pdf
├── [-rw-rw-r-- 8.5K]  ../lab4files/sample.xls
├── [-rw-rw-r--  42K]  ../lab4files/Tux.png
├── [-rw-rw-r-- 2.0M]  ../lab4files/Ubuntu.pdf
└── [-rw-rw-r-- 134K]  ../lab4files/website.html

0 directories, 10 files
falarcon@cis106:~/Downloads$  tree ../lab4files/ -tug
../lab4files/
├── [falarcon falarcon]  Linux.pdf
├── [falarcon falarcon]  Tux.png
├── [falarcon falarcon]  Ubuntu.pdf
├── [falarcon falarcon]  sample.xls
├── [falarcon falarcon]  globe.avi
├── [falarcon falarcon]  document.docx
├── [falarcon falarcon]  csvfile.csv
├── [falarcon falarcon]  countries.json
├── [falarcon falarcon]  website.html
└── [falarcon falarcon]  helloWorld.c

0 directories, 10 files
falarcon@cis106:~/Downloads$ tree ../lab4files/ -X
<?xml version="1.0" encoding="UTF-8"?>
<tree>
  <directory name="../lab4files/">
    <file name="countries.json"></file>
    <file name="csvfile.csv"></file>
    <file name="document.docx"></file>
    <file name="globe.avi"></file>
    <file name="helloWorld.c"></file>
    <file name="Linux.pdf"></file>
    <file name="sample.xls"></file>
    <file name="Tux.png"></file>
    <file name="Ubuntu.pdf"></file>
    <file name="website.html"></file>
  </directory>
  <report>
    <directories>0</directories>
    <files>10</files>
  </report>
</tree>
falarcon@cis106:~/Downloads$ tree ../lab4files/ -J
[
  {"type":"directory","name":"../lab4files/","contents":[
    {"type":"file","name":"countries.json"},
    {"type":"file","name":"csvfile.csv"},
    {"type":"file","name":"document.docx"},
    {"type":"file","name":"globe.avi"},
    {"type":"file","name":"helloWorld.c"},
    {"type":"file","name":"Linux.pdf"},
    {"type":"file","name":"sample.xls"},
    {"type":"file","name":"Tux.png"},
    {"type":"file","name":"Ubuntu.pdf"},
    {"type":"file","name":"website.html"}
  ]},
  {"type":"report","directories":0,"files":10}
]
falarcon@cis106:~/Downloads$ 
```

# Question 5

```
                                                        falarcon@cis106: ~
 falarcon@cis106:~$ exa --help
 Usage:
   exa [options] [files...]

 META OPTIONS
   -?, --help          show list of command-line options
   -v, --version       show version of exa

 DISPLAY OPTIONS
   -1, --oneline       display one entry per line
   -l, --long          display extended file metadata as a table
   -G, --grid          display entries as a grid (default)
   -x, --across        sort the grid across, rather than downwards
   -R, --recurse       recurse into directories
   -T, --tree          recurse into directories as a tree
   -F, --classify      display type indicator by file names
   --colo[u]r=WHEN     when to use terminal colours (always, auto, never)
   --colo[u]r-scale    highlight levels of file sizes distinctly
   --icons             display icons
   --no-icons          don't display icons (always overrides --icons)

 FILTERING AND SORTING OPTIONS
   -a, --all                      show hidden and 'dot' files
   -d, --list-dirs                list directories as files; don't list their content
   -L, --level DEPTH              limit the depth of recursion
   -r, --reverse                  reverse the sort order
   -s, --sort SORT_FIELD          which field to sort by
   --group-directories-first      list directories before other files
   -D, --only-dirs                list only directories
   -I, --ignore-glob GLOBS        glob patterns (pipe-separated) of files to ignore
   --git-ignore                   ignore files mentioned in '.gitignore'
   Valid sort fields:             name, Name, extension, Extension, size, type,
                                  modified, accessed, created, inode, and none.
```

```
 ::: Applications  Places
                                                        falarcon@cis106: ~
 falarcon@cis106:~$ exa -l lab4files/
 .rw-rw-r--   20k falarcon 22 Feb 14:16 countries.json
 .rw-rw-r--  284k falarcon 22 Feb 14:15 csvfile.csv
 .rw-rw-r--  764k falarcon 22 Feb 14:13 document.docx
 .rw-rw-r--  742k falarcon 22 Feb 14:12 globe.avi
 .rw-rw-r--   76 falarcon 22 Feb 14:18 helloWorld.c
 .rw-rw-r--  2.6M falarcon 22 Feb 14:10 Linux.pdf
 .rw-rw-r--  8.7k falarcon 22 Feb 14:12 sample.xls
 .rw-rw-r--   43k falarcon 22 Feb 14:10 Tux.png
 .rw-rw-r--  2.1M falarcon 22 Feb 14:11 Ubuntu.pdf
 .rw-rw-r--  137k falarcon 22 Feb 14:16 website.html
 falarcon@cis106:~$ exa -T lab4files/
 lab4files
 ├── countries.json
 ├── csvfile.csv
 ├── document.docx
 ├── globe.avi
 ├── helloWorld.c
 ├── Linux.pdf
 ├── sample.xls
 ├── Tux.png
 ├── Ubuntu.pdf
 └── website.html
 falarcon@cis106:~$ exa -hU lab4files/
```

```
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv     globe.avi      Linux.pdf     Tux.png     website.html
falarcon@cis106:~$

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```