

Lab 4 | The Linux Filesystem!

Question 1: The Linux Filesystem

Table 1

Create a table that includes the following directories and their usage:

1. bin
2. dev
3. etc
4. home
5. media
6. opt
7. proc
8. srv
9. usr
10. var

DIRECTORY	F U N C T I O N
bin	- Essential Commands
dev	- Device Files
etc	- System Configuration Files
home	- User Home Directories
media	- Mount Point For Removable Media, Such As DVD's And Floppy Disc
opt	- Add-On Software Packages
proc	- Kernal 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 Application
var	- Dedicated To Variable Data, Such As Logs, Databases, Websites, And Temporary Spool (e-mail etc.) Files That Persist From One Boot To The Next

Table 2

Create a table of the commands used for navigating the file system (cd, pwd, ls). YOUR TABLE MUST INCLUDE THE FOLLOWING!!:

- The command,
- What the command does,
- The syntax/formula of how to use the commands,
- An Example/ An ie.

Commands	What It Does??	Syntax	Examples
cd	- Changes the current working directory. in other words, moves you around	cd	cd + destination
pwd	- Displays the current working directory (Where you are currently working)	pwd	pwd /home/user
ls	- Listing the content of a given directory or the file/directory itself	ls	ls -a, ls -a ~/pictures

```

cvfermin@Cis106: ~$ cd cis106
cvfermin@Cis106:~/cis106$

```

```

cvfermin@Cis106: ~$ ls
cis106  Documents  Music      Public  Templates
Desktop Downloads  Pictures   snap    Videos
cvfermin@Cis106:~$ ls -a
.          Documents  snap
..         Downloads  .ssh
.bash_history .gitconfig .sudo_as_admin_successful
.bash_logout .gnupg     Templates
.bashrc      .icons     .themes
.blocks-log  .local     .vboxclient-clipboard.pid
.blocks-progress .mozilla   .vboxclient-display-svg-x11.pid
.cache       Music      .vboxclient-draganddrop.pid
cis106       Pictures   .vboxclient-seamless.pid
.cis106.png  .pki      Videos
.config      .profile  .vscode
Desktop      Public
cvfermin@Cis106:~$

```

```

cvfermin@Cis106: ~$ pwd
/home/cvfermin
cvfermin@Cis106:~$

```

Question 2

```
cvfermin@Cis106: /etc/firefox

cvfermin@Cis106:~$ pwd
/home/cvfermin
cvfermin@Cis106:~$ cd /usr/share/themes/
cvfermin@Cis106:/usr/share/themes$ pwd
/usr/share/themes
cvfermin@Cis106:/usr/share/themes$ cd /
cvfermin@Cis106:/$ cd /etc/firefox/
cvfermin@Cis106:/etc/firefox$
```

```
cvfermin@Cis106:/etc/firefox$ cd
cvfermin@Cis106:~$ cd Downloads/
cvfermin@Cis106:~/Downloads$ cd ../../
cvfermin@Cis106:/home$ pwd
/home
cvfermin@Cis106:/home$ cd cvfermin/Documents/
cvfermin@Cis106:~/Documents$
```

Question 3

```
cvfermin@Cis106: ~/lab4files
cvfermin@Cis106:~/lab4files$ cd /usr/share/
cvfermin@Cis106:/usr/share$ ls /home/cvfermin/lab4files/
countries.json csvfile.csv document.docx globe.avi helloWorld.c Lin
ux.pdf sample.xls Tux.png Ubuntu.pdf website.html
cvfermin@Cis106:/usr/share$ cd ~/lab4files/
cvfermin@Cis106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 cvfermin cvfermin 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 cvfermin cvfermin 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 cvfermin cvfermin 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 cvfermin cvfermin 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 cvfermin cvfermin 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 cvfermin cvfermin 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 cvfermin cvfermin 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 cvfermin cvfermin 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 cvfermin cvfermin 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 cvfermin cvfermin 135K Feb 22 14:16 website.html
cvfermin@Cis106:~/lab4files$ ls -lhS
total 6.5M
-rw-rw-r-- 1 cvfermin cvfermin 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 cvfermin cvfermin 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 cvfermin cvfermin 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 cvfermin cvfermin 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 cvfermin cvfermin 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 cvfermin cvfermin 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 cvfermin cvfermin 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 cvfermin cvfermin 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 cvfermin cvfermin 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 cvfermin cvfermin 76 Feb 22 14:18 helloWorld.c
cvfermin@Cis106:~/lab4files$
```

```
cvfermin@Cis106: ~/lab4files
cvfermin@Cis106:~/lab4files$ ls -lhSgGi
total 6.5M
133408 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
133411 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
133414 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
133415 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
133413 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
133418 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
133410 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
133412 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
133417 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
133416 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
cvfermin@Cis106:~/lab4files$ ls -Xr
sample.xls Ubuntu.pdf countries.json document.docx helloWorld.c
Tux.png Linux.pdf website.html csvfile.csv globe.avi
cvfermin@Cis106:~/lab4files$
```

Question 4

```
cvfermin@Cis106:~/lab4files$ cd /etc/  
cvfermin@Cis106:/etc$ tree ~/lab4files/  
/home/cvfermin/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  
cvfermin@Cis106:/etc$
```

```
cvfermin@Cis106: ~/Downloads
cvfermin@Cis106: ~/Downloads
cvfermin@Cis106:~/Downloads$ cd ~/Downloads/
cvfermin@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
cvfermin@Cis106:~/Downloads$ tree ../lab4files/ -tug
../lab4files/
├── [cvfermin cvfermin] Linux.pdf
├── [cvfermin cvfermin] Tux.png
├── [cvfermin cvfermin] Ubuntu.pdf
├── [cvfermin cvfermin] sample.xls
├── [cvfermin cvfermin] globe.avi
├── [cvfermin cvfermin] document.docx
├── [cvfermin cvfermin] csvfile.csv
├── [cvfermin cvfermin] countries.json
├── [cvfermin cvfermin] website.html
└── [cvfermin cvfermin] helloWorld.c

0 directories, 10 files
cvfermin@Cis106:~/Downloads$
```

```
cvfermin@Cis106: ~/Downloads
cvfermin@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>
```

```
cvfermin@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}
]
cvfermin@Cis106:~/Downloads$
```

Question 5

```

cvfermin@Cis106:~$ exa --help
Usage:
  exa [options] [files...]

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

DISPLAY OPTIONS
  -l, --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 contents
  -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,

```

```

cvfermin@Cis106: ~
cvfermin@Cis106:~$ exa -l lab4files/
.rw-rw-r-- 20k cvfermin 22 Feb 14:16 countries.json
.rw-rw-r-- 284k cvfermin 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k cvfermin 22 Feb 14:13 document.docx
.rw-rw-r-- 742k cvfermin 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 cvfermin 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M cvfermin 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k cvfermin 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k cvfermin 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M cvfermin 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k cvfermin 22 Feb 14:16 website.html
cvfermin@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
cvfermin@Cis106:~$

```



```
cvfermin@Cis106: ~  
cvfermin@Cis106:~$ exa -lh lab4files/  
Permissions Size User Date Modified Name  
.rw-rw-r-- 20k cvfermin 22 Feb 14:16 countries.json  
.rw-rw-r-- 284k cvfermin 22 Feb 14:15 csvfile.csv  
.rw-rw-r-- 764k cvfermin 22 Feb 14:13 document.docx  
.rw-rw-r-- 742k cvfermin 22 Feb 14:12 globe.avi  
.rw-rw-r-- 76 cvfermin 22 Feb 14:18 helloWorld.c  
.rw-rw-r-- 2.6M cvfermin 22 Feb 14:10 Linux.pdf  
.rw-rw-r-- 8.7k cvfermin 22 Feb 14:12 sample.xls  
.rw-rw-r-- 43k cvfermin 22 Feb 14:10 Tux.png  
.rw-rw-r-- 2.1M cvfermin 22 Feb 14:11 Ubuntu.pdf  
.rw-rw-r-- 137k cvfermin 22 Feb 14:16 website.html
```

```
cvfermin@Cis106:~$ exa --no-user -lh lab4files/  
Permissions Size Date Modified Name  
.rw-rw-r-- 20k 22 Feb 14:16 countries.json  
.rw-rw-r-- 284k 22 Feb 14:15 csvfile.csv  
.rw-rw-r-- 764k 22 Feb 14:13 document.docx  
.rw-rw-r-- 742k 22 Feb 14:12 globe.avi  
.rw-rw-r-- 76 22 Feb 14:18 helloWorld.c  
.rw-rw-r-- 2.6M 22 Feb 14:10 Linux.pdf  
.rw-rw-r-- 8.7k 22 Feb 14:12 sample.xls  
.rw-rw-r-- 43k 22 Feb 14:10 Tux.png  
.rw-rw-r-- 2.1M 22 Feb 14:11 Ubuntu.pdf  
.rw-rw-r-- 137k 22 Feb 14:16 website.html  
cvfermin@Cis106:~$
```