

Lab 4 The Linux file system

Question 1

Tablet 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 DVD and floppy disk
opt	Add-on software packages
proc	process information pseudo-filesystem
srv	Information relating to services that run on the system
usr	Software not essential for system operation, such as applications

Tablet 2

Command	What it does	Syntax	Example
cd	Change the current work directory	cd + option	cd Downloads
pwd	Display the current work directory	pwd	pwd
ls	is use for listing the content of a given directory	ls	ls -a ~/pictures

Question 2

```
alfonzo@CIS106:~$ pwd
/home/alfonzo
alfonzo@CIS106:~$ cd /usr/share/themes/
alfonzo@CIS106:/usr/share/themes$ pwd
/usr/share/themes
alfonzo@CIS106:/usr/share/themes$ cd /
alfonzo@CIS106:/$ cd /etc/firefox/
alfonzo@CIS106:/etc/firefox$
```

```
alfonzo@CIS106:/etc/firefox$ cd
alfonzo@CIS106:~$ cd Downloads/
alfonzo@CIS106:~/Downloads$ cd ../../
alfonzo@CIS106:/home$ pwd
/home
alfonzo@CIS106:/home$ cd alfonzo/Documents/
alfonzo@CIS106:~/Documents$
```

Question 3

```
alfonzo@CIS106:~$ cd /usr/share/
alfonzo@CIS106:/usr/share$ ls /home/alfonzo/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
alfonzo@CIS106:/usr/share$ cd ~/lab4files/
alfonzo@CIS106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 alfonzo alfonzo 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 alfonzo alfonzo 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 alfonzo alfonzo 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 alfonzo alfonzo 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 alfonzo alfonzo 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 alfonzo alfonzo 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 alfonzo alfonzo 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 alfonzo alfonzo 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 alfonzo alfonzo 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 alfonzo alfonzo 135K Feb 22 14:16 website.html
alfonzo@CIS106:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 alfonzo alfonzo 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 alfonzo alfonzo 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 alfonzo alfonzo 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 alfonzo alfonzo 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 alfonzo alfonzo 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 alfonzo alfonzo 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 alfonzo alfonzo 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 alfonzo alfonzo 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 alfonzo alfonzo 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 alfonzo alfonzo 76 Feb 22 14:18 helloWorld.c
alfonzo@CIS106:~/lab4files$
```

```
alfonzo@CIS106:~/lab4files$ ls -lhSgGi
total 6.5M
1187957 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
1187959 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
1187962 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
1187963 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
1187961 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
1187966 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
1187958 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
1187960 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
1187965 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
1187964 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
alfonzo@CIS106:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png     Linux.pdf   website.html   csvfile.csv   globe.avi
alfonzo@CIS106:~/lab4files$
```

Question 4

```
alfonzo@CIS106:~/lab4files$ cd /etc/
alfonzo@CIS106:/etc$ tree ~/lab4files/
/home/alfonzo/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
alfonzo@CIS106:/etc$
```

```
alfonzo@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
alfonzo@CIS106:~/Downloads$ tree ../lab4files/ -tg
../lab4files/
├── [alfonzo ] Linux.pdf
├── [alfonzo ] Tux.png
├── [alfonzo ] Ubuntu.pdf
├── [alfonzo ] sample.xls
├── [alfonzo ] globe.avi
├── [alfonzo ] document.docx
├── [alfonzo ] csvfile.csv
├── [alfonzo ] countries.json
├── [alfonzo ] website.html
└── [alfonzo ] helloWorld.c
```

```
alfonzo@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>
alfonzo@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}
]
```

Question 5

```

alfonzo@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 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,
                     modified, accessed, created, inode, and none.
                     date, time, old, and new all refer to modified.

LONG VIEW OPTIONS
  -b, --binary        list file sizes with binary prefixes
  -B, --bytes         list file sizes in bytes, without any prefixes
  -g, --group         list each file's group
  -h, --header        add a header row to each column
  -H, --links         list each file's number of hard links
  -i, --inode         list each file's inode number
  -m, --modified      use the modified timestamp field
  -n, --numeric       list numeric user and group IDs
  -S, --blocks        show number of file system blocks
  -t, --time FIELD    which timestamp field to list (modified, accessed, created)
  -u, --accessed      use the accessed timestamp field
  -U, --created       use the created timestamp field
  --changed           use the changed timestamp field
  --time-style        how to format timestamps (default, iso, long-iso, full-iso)
  --no-permissions    suppress the permissions field
  --octal-permissions list each file's permission in octal format
  --no-filesize       suppress the filesize field
  --no-user           suppress the user field
  --no-time           suppress the time field
  --git              list each file's Git status, if tracked or ignored
  -@, --extended      list each file's extended attributes and sizes

```

```
alfonzo@CIS106:~$ exa -l lab4files/
.rw-rw-r-- 20k alfonzo 22 Feb 14:16 countries.json
.rw-rw-r-- 284k alfonzo 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k alfonzo 22 Feb 14:13 document.docx
.rw-rw-r-- 742k alfonzo 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 alfonzo 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M alfonzo 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k alfonzo 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k alfonzo 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M alfonzo 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k alfonzo 22 Feb 14:16 website.html
alfonzo@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
alfonzo@CIS106:~$ exa -lh lab4files/
Permissions Size User Date Modified Name
.rw-rw-r-- 20k alfonzo 22 Feb 14:16 countries.json
.rw-rw-r-- 284k alfonzo 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k alfonzo 22 Feb 14:13 document.docx
.rw-rw-r-- 742k alfonzo 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 alfonzo 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M alfonzo 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k alfonzo 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k alfonzo 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M alfonzo 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k alfonzo 22 Feb 14:16 website.html
```