

Lab 4 The Linux filesystem

Question 1

Directory	Function
Bin	Essential Commands
dev	Device files
etc	System configuration files
home	User home directories
media	Mount point for removable media
opt	Add on software package
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
var	dedicated to variable data, such as logs, databases, websites. files that persist from one boot to the next

Commands	what it does	Syntax	Example
cd	Used for changing the current working directory	cd +destination	cd /home/\$USER/documents
Pwd	used for displaying the current working directory		pwd /home/user
ls	used for displaying all the files inside a given directory	ls + command + file	ls -r directory/to/list

Question 2

```
angel922@cis106:~$ pwd
/home/angel922
angel922@cis106:~$ cd /usr/share/themes/
angel922@cis106:/usr/share/themes$ pwd
/usr/share/themes
angel922@cis106:/usr/share/themes$ cd /
angel922@cis106:/$ cd /etc/firefox/
angel922@cis106:/etc/firefox$

angel922@cis106: ~/Documents
angel922@cis106:/etc/firefox$ cd
angel922@cis106:~$ cd Downloads/
angel922@cis106:~/Downloads$ cd ../../
angel922@cis106:/home$ pwd
/home
angel922@cis106:/home$ cd angel922/documents/
bash: cd: angel922/documents/: No such file or directory
angel922@cis106:/home$ cd angel922/Documents/
angel922@cis106:~/Documents$
```

Question 3

```

angel922@cis106:~$ cd /usr/share/
angel922@cis106:/usr/share$ ls /home/angel922/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
angel922@cis106:/usr/share$ cd ~/lab4files/
angel922@cis106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 angel922 angel922 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 angel922 angel922 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 angel922 angel922 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 angel922 angel922 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 angel922 angel922 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 angel922 angel922 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 angel922 angel922 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 angel922 angel922 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 angel922 angel922 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 angel922 angel922 135K Feb 22 14:16 website.html
angel922@cis106:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 angel922 angel922 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 angel922 angel922 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 angel922 angel922 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 angel922 angel922 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 angel922 angel922 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 angel922 angel922 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 angel922 angel922 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 angel922 angel922 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 angel922 angel922 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 angel922 angel922 76 Feb 22 14:18 helloWorld.c
angel922@cis106:~/lab4files$

```

```

angel922@cis106:~/lab4files$ ls -lhSgGi
total 6.5M
790023 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
790025 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
790028 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
790029 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
790027 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
790032 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
790024 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
790026 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
790031 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
790030 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
angel922@cis106:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png     Linux.pdf   website.html    csvfile.csv    globe.avi
angel922@cis106:~/lab4files$

```

Question 4

```
angel922@cis106:~/lab4files$ cd /etc/  
angel922@cis106:/etc$ tree ~/lab4files/  
/home/angel922/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  
angel922@cis106:/etc$
```

```
angel922@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  
angel922@cis106:~/Downloads$ tree ../lab4files/ -tg  
../lab4files/  
├── [angel922] Linux.pdf  
├── [angel922] Tux.png  
├── [angel922] Ubuntu.pdf  
├── [angel922] sample.xls  
├── [angel922] globe.avi  
├── [angel922] document.docx  
├── [angel922] csvfile.csv  
├── [angel922] countries.json  
├── [angel922] website.html  
└── [angel922] helloWorld.c
```

```
angel922@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>
angel922@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}
]
angel922@cis106:~/Downloads$
```

Question 5

```
angel922@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
```

```
angel922@cis106:~$ exa -l lab4files/
.rw-rw-r-- 20k angel922 22 Feb 14:16 countries.json
.rw-rw-r-- 284k angel922 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k angel922 22 Feb 14:13 document.docx
.rw-rw-r-- 742k angel922 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 angel922 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M angel922 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k angel922 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k angel922 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M angel922 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k angel922 22 Feb 14:16 website.html
```

```
angel922@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
```

```
angel922@cts106:~$ exa -no-user lab4files/  
exa: Unknown argument -o  
angel922@cts106:~$ exa --no-user lab4files/  
countries.json  csvfile.csv  document.docx  globe.avi  helloWorld.c  Linux.pdf  sample.xls  Tux.png  Ubuntu.pdf  website.html  
angel922@cts106:~$
```