

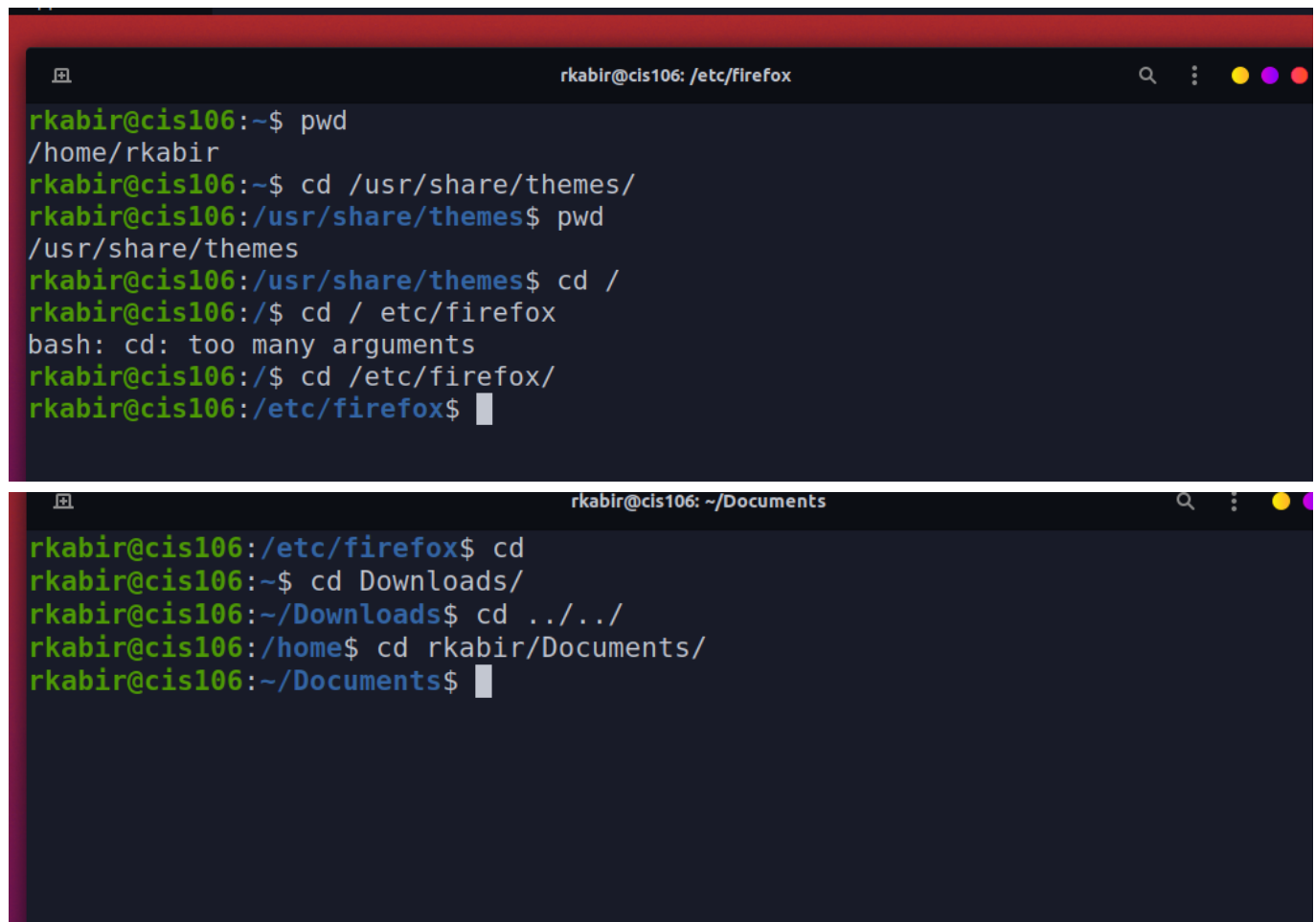
Lab 4 The Linux fs

Question 1

Table 1

Table 2

Question 2



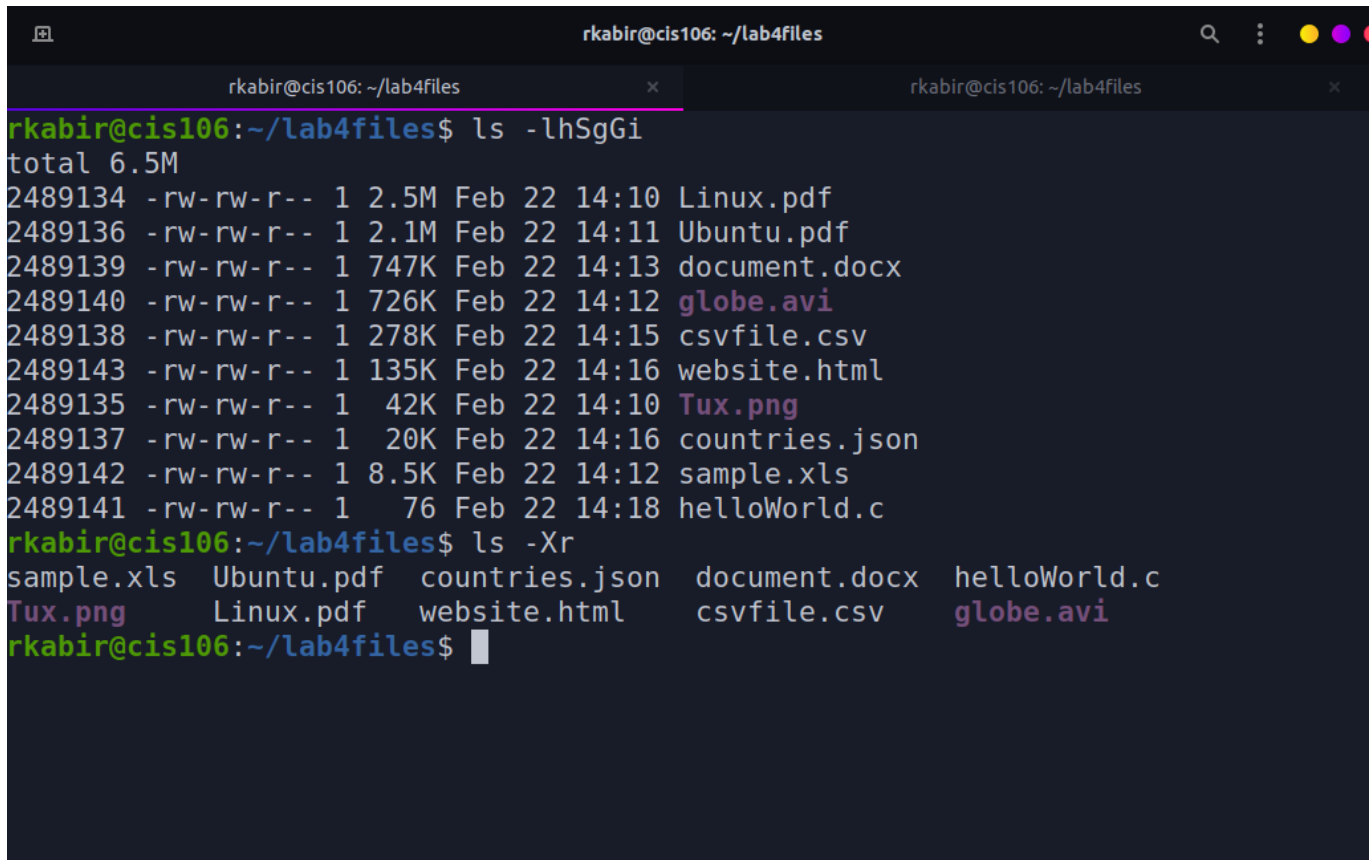
The image contains two terminal window screenshots. The top window shows a user navigating from their home directory to /usr/share/themes and then to /etc/firefox. The bottom window shows the user navigating from /etc/firefox back to their home directory, then to Downloads, and finally to ~/Documents.

```
rkabir@cis106: /etc/firefox
rkabir@cis106:~$ pwd
/home/rkabir
rkabir@cis106:~$ cd /usr/share/themes/
rkabir@cis106:/usr/share/themes$ pwd
/usr/share/themes
rkabir@cis106:/usr/share/themes$ cd /
rkabir@cis106:/$ cd / etc/firefox
bash: cd: too many arguments
rkabir@cis106:/$ cd /etc/firefox/
rkabir@cis106:/etc/firefox$

rkabir@cis106: ~/Documents
rkabir@cis106:/etc/firefox$ cd
rkabir@cis106:~$ cd Downloads/
rkabir@cis106:~/Downloads$ cd ../../
rkabir@cis106:/home$ cd rkabir/Documents/
rkabir@cis106:~/Documents$
```

Question 3

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



```
rkabir@cis106: ~/lab4files
rkabir@cis106: ~/lab4files
rkabir@cis106:~/lab4files$ ls -lhSgGi
total 6.5M
2489134 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
2489136 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
2489139 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
2489140 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
2489138 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
2489143 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
2489135 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
2489137 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
2489142 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
2489141 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
rkabir@cis106:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png    Linux.pdf   website.html    csvfile.csv    globe.avi
rkabir@cis106:~/lab4files$
```

Question 4


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

```
rkabir@cis106: ~/Downloads

rkabir@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

directories, 10 files
rkabir@cis106:~/Downloads$ tree ../lab4files/ -fhu
../lab4files
├── [rkabir 20K] ../lab4files/countries.json
├── [rkabir 277K] ../lab4files/csvfile.csv
├── [rkabir 746K] ../lab4files/document.docx
├── [rkabir 725K] ../lab4files/globe.avi
├── [rkabir 76] ../lab4files/helloWorld.c
├── [rkabir 2.5M] ../lab4files/Linux.pdf
├── [rkabir 8.5K] ../lab4files/sample.xls
├── [rkabir 42K] ../lab4files/Tux.png
├── [rkabir 2.0M] ../lab4files/Ubuntu.pdf
└── [rkabir 134K] ../lab4files/website.html

directories, 10 files
rkabir@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>
```

```
<file name= website.html ></file>
</directory>
<report>
  <directories>0</directories>
  <files>10</files>
</report>
/tree>
rkabir@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":"document.docx"},
  {"type":"file","name":"document.docx"},
  {"type":"file","name":"document.docx"},
  {"type":"file","name":"document.docx"},
  {"type":"file","name":"document.docx"},
  {"type":"file","name":"document.docx"},
  {"type":"file","name":"document.docx"}
]}
```

Question 5

```
rkabir@cis106: ~
rkabir@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,
                        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
rkabir@cis106:~$
```

```
rkabir@cis106:~$ exa -l lab4files/
.rw-rw-r-- 20k rkabir 22 Feb 14:16 countries.json
.rw-rw-r-- 284k rkabir 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k rkabir 22 Feb 14:13 document.docx
.rw-rw-r-- 742k rkabir 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 rkabir 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M rkabir 22 Feb 14:10 Linux.pdf
```

```
.rw-rw-r-- 8.7k rkabir 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k rkabir 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M rkabir 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k rkabir 22 Feb 14:16 website.html
rkabir@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
rkabir@cis106:~$ exa -F lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
rkabir@cis106:~$ exa -U lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
rkabir@cis106:~$
```