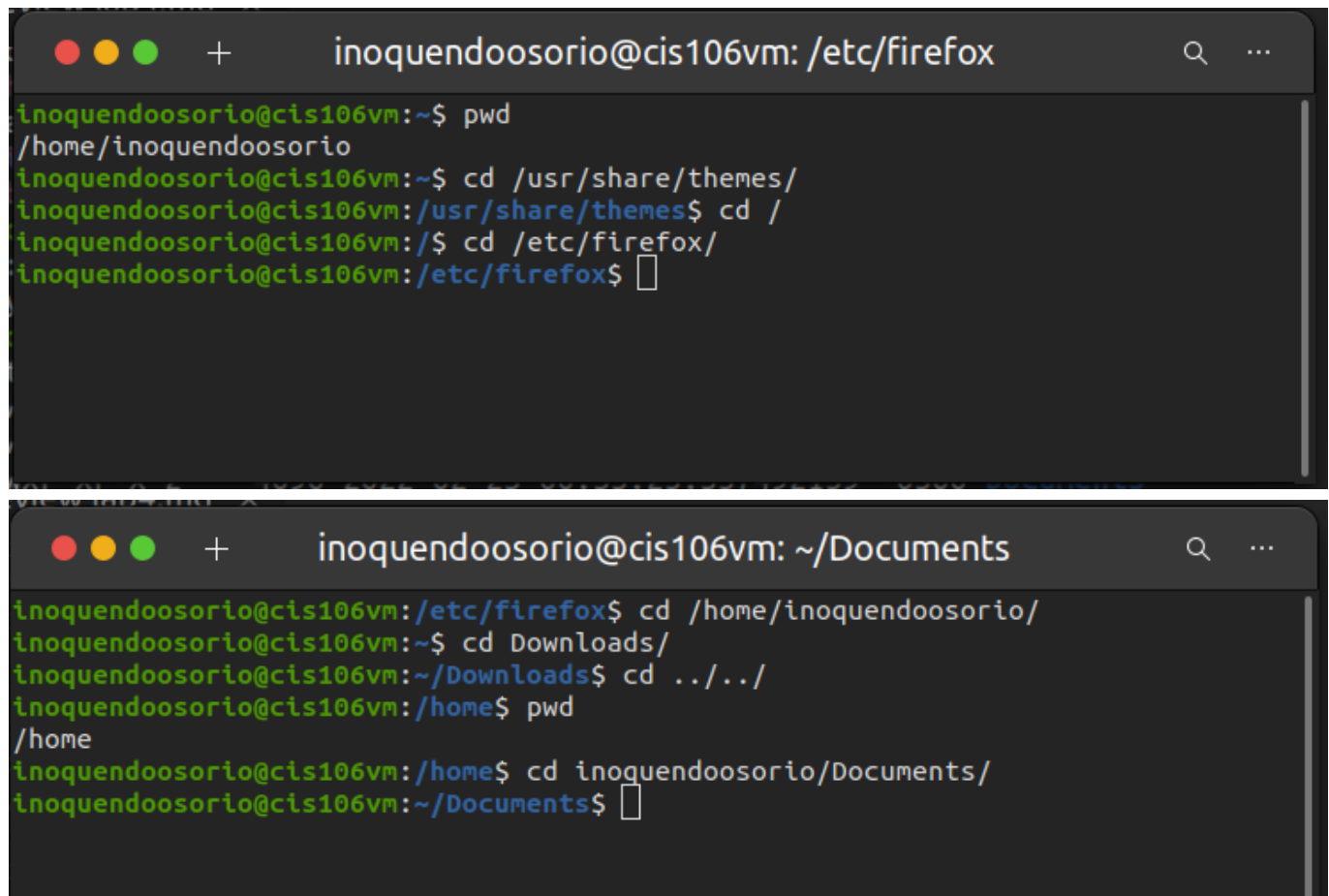


Lab 4

Question 1: | The pwd and cd commands to move around the file system.



The image contains two terminal window screenshots. The top window has a title bar 'inoquendoosorio@cis106vm: /etc/firefox' and shows the following commands and output:
inoquendoosorio@cis106vm:~\$ pwd
/home/inoquendoosorio
inoquendoosorio@cis106vm:~\$ cd /usr/share/themes/
inoquendoosorio@cis106vm:/usr/share/themes\$ cd /
inoquendoosorio@cis106vm:/\$ cd /etc/firefox/
inoquendoosorio@cis106vm:/etc/firefox\$
The bottom window has a title bar 'inoquendoosorio@cis106vm: ~/Documents' and shows the following commands and output:
inoquendoosorio@cis106vm:/etc/firefox\$ cd /home/inoquendoosorio/
inoquendoosorio@cis106vm:~\$ cd Downloads/
inoquendoosorio@cis106vm:~/Downloads\$ cd ../../
inoquendoosorio@cis106vm:/home\$ pwd
/home
inoquendoosorio@cis106vm:/home\$ cd inoquendoosorio/Documents/
inoquendoosorio@cis106vm:~/Documents\$

Question 2 | The ls command

```
inoquendoosorio@cis106vm: ~/lab4files

inoquendoosorio@cis106vm:~$ cd /usr/share/
inoquendoosorio@cis106vm:/usr/share$ ls /home/inoquendoosorio/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png    website.html
inoquendoosorio@cis106vm:/usr/share$ cd ~/lab4files/
inoquendoosorio@cis106vm:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 76 Feb 22 14:18 helloWorld.c
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 135K Feb 22 14:16 website.html
inoquendoosorio@cis106vm:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 2.5M Feb 22 14:10 Linux.pdf
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 2.1M Feb 22 14:11 Ubuntu.pdf
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 747K Feb 22 14:13 document.docx
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 726K Feb 22 14:12 globe.avi
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 278K Feb 22 14:15 csvfile.csv
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 135K Feb 22 14:16 website.html
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 42K Feb 22 14:10 Tux.png
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 20K Feb 22 14:16 countries.json
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 8.5K Feb 22 14:12 sample.xls
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 76 Feb 22 14:18 helloWorld.c
inoquendoosorio@cis106vm:~/lab4files$ ls -lhSgGi
total 6.5M
1981055 -rw-rw-r-- 1 2.5M Feb 22 14:10 Linux.pdf
1981057 -rw-rw-r-- 1 2.1M Feb 22 14:11 Ubuntu.pdf
1981060 -rw-rw-r-- 1 747K Feb 22 14:13 document.docx
1981061 -rw-rw-r-- 1 726K Feb 22 14:12 globe.avi
1981059 -rw-rw-r-- 1 278K Feb 22 14:15 csvfile.csv
1981064 -rw-rw-r-- 1 135K Feb 22 14:16 website.html
1981056 -rw-rw-r-- 1 42K Feb 22 14:10 Tux.png
1981058 -rw-rw-r-- 1 20K Feb 22 14:16 countries.json
1981063 -rw-rw-r-- 1 8.5K Feb 22 14:12 sample.xls
1981062 -rw-rw-r-- 1 76 Feb 22 14:18 helloWorld.c
inoquendoosorio@cis106vm:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png     Linux.pdf   website.html    csvfile.csv    globe.avi
inoquendoosorio@cis106vm:~/lab4files$
```

Question 3 | The tree & exa command. A modern tool to replace ls command.

```
inoquendoosorio@cis106vm: ~/Downloads

inoquendoosorio@cis106vm:/etc$ tree ~/lab4files
/home/inoquendoosorio/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
inoquendoosorio@cis106vm:/etc$ cd ~/Downloads/
inoquendoosorio@cis106vm:~/Downloads$ tree -fph ../lab4files
../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
inoquendoosorio@cis106vm:~/Downloads$
```

```
inoquendoosorio@cis106vm: ~/Downloads

inoquendoosorio@cis106vm:~/Downloads$ tree -tug ../lab4files
../lab4files
├── [inoquendoosorio inoquendoosorio] Linux.pdf
├── [inoquendoosorio inoquendoosorio] Tux.png
├── [inoquendoosorio inoquendoosorio] Ubuntu.pdf
├── [inoquendoosorio inoquendoosorio] sample.xls
├── [inoquendoosorio inoquendoosorio] globe.avi
├── [inoquendoosorio inoquendoosorio] document.docx
├── [inoquendoosorio inoquendoosorio] csvfile.csv
├── [inoquendoosorio inoquendoosorio] countries.json
├── [inoquendoosorio inoquendoosorio] website.html
└── [inoquendoosorio inoquendoosorio] helloWorld.c

0 directories, 10 files
inoquendoosorio@cis106vm:~/Downloads$ 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
```

```
inoquendoosorio@cis106vm: ~/Downloads

inoquendoosorio@cis106vm:~/Downloads$ exa ~/lab4files/ -l
.rw-rw-r-- 20k inoquendoosorio 22 Feb 14:16 countries.json
.rw-rw-r-- 284k inoquendoosorio 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k inoquendoosorio 22 Feb 14:13 document.docx
.rw-rw-r-- 742k inoquendoosorio 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 inoquendoosorio 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M inoquendoosorio 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k inoquendoosorio 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k inoquendoosorio 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M inoquendoosorio 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k inoquendoosorio 22 Feb 14:16 website.html
inoquendoosorio@cis106vm:~/Downloads$ exa ~/lab4files/ -lh
Permissions Size User Date Modified Name
.rw-rw-r-- 20k inoquendoosorio 22 Feb 14:16 countries.json
.rw-rw-r-- 284k inoquendoosorio 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k inoquendoosorio 22 Feb 14:13 document.docx
.rw-rw-r-- 742k inoquendoosorio 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 inoquendoosorio 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M inoquendoosorio 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k inoquendoosorio 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k inoquendoosorio 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M inoquendoosorio 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k inoquendoosorio 22 Feb 14:16 website.html
inoquendoosorio@cis106vm:~/Downloads$
```

```
inoquendoosorio@cis106vm: ~/Downloads

inoquendoosorio@cis106vm:~/Downloads$ exa ~/lab4files/ -lh --no-user -U
Permissions Size Date Created Name
.rw-rw-r-- 20k 17 Oct 13:37 countries.json
.rw-rw-r-- 284k 17 Oct 13:37 csvfile.csv
.rw-rw-r-- 764k 17 Oct 13:37 document.docx
.rw-rw-r-- 742k 17 Oct 13:37 globe.avi
.rw-rw-r-- 76 17 Oct 13:37 helloWorld.c
.rw-rw-r-- 2.6M 17 Oct 13:37 Linux.pdf
.rw-rw-r-- 8.7k 17 Oct 13:37 sample.xls
.rw-rw-r-- 43k 17 Oct 13:37 Tux.png
.rw-rw-r-- 2.1M 17 Oct 13:37 Ubuntu.pdf
.rw-rw-r-- 137k 17 Oct 13:37 website.html
inoquendoosorio@cis106vm:~/Downloads$
```

Question 4 | Challenge Question


```
inoquendoosorio@cis106vm: /dev/disk/by-id
inoquendoosorio@cis106vm: /... x inoquendoosorio@cis106vm: ~ x
inoquendoosorio@cis106vm:~$ pwd
/home/inoquendoosorio
inoquendoosorio@cis106vm:~$ cd /usr/share/icons/default/
inoquendoosorio@cis106vm:/usr/share/icons/default$ cd ../../../../proc/sys/net/
ipv4/
inoquendoosorio@cis106vm:/proc/sys/net/ipv4$ cd -
/usr/share/icons/default
inoquendoosorio@cis106vm:/usr/share/icons/default$ ls /usr/share/backgrounds/
brad-huchteman-stone-mountain.jpg hardy_wallpaper_uhd.png
contest joshua-coleman-something-yellow.jpg
Dynamic01.jpg matt-mcnulty-nyc-2nd-ave.jpg
Dynamic02.jpg ryan-stone-skykomish-river.jpg
Dynamic03.jpg ubuntu-default-greyscale-wallpaper.png
Dynamic04.jpg Vector-Wave1.jpg
Dynamic05.jpg Vector-Wave2.jpg
Dynamic06.jpg Vector-Wave3.jpg
Dynamic07.jpg warty-final-ubuntu.png
Focal-Fossa_WP_4096x2304_GREY.png
inoquendoosorio@cis106vm:/usr/share/icons/default$ ls ~/cis106-f22/
cheatSheets finalProject labs weeklyReports
inoquendoosorio@cis106vm:/usr/share/icons/default$ ls ~/Downloads/
final-sp22-passwordprocted.zip
'Lecture 01_Introduction to Forensic Science.odp'
'Lecture 01_Introduction to Forensic Science.pptx'
'Lecture 02_Crime Scene Investigation.odp'
'Lecture 02_Crime Scene Investigation.pptx'
'Linux Workshop Ubuntu Software installation cheat sheet.png'
pexels-photo-10162701.jpeg
pexels-photo-11519194.jpeg
pexels-photo-7478593.jpeg
'Spring 22 Final(Isaac).pdf'
inoquendoosorio@cis106vm:/usr/share/icons/default$ cd /dev/disk/by-id/
inoquendoosorio@cis106vm:/dev/disk/by-id$ ls -la ~/
total 3676
drwxr-xr-x 36 inoquendoosorio inoquendoosorio 4096 Oct 17 13:37 .
drwxr-xr-x 3 root root 4096 Feb 23 2022 ..
-rw-rw-r-- 1 inoquendoosorio inoquendoosorio 41 May 14 18:32 .bash_alias
es
-rw----- 1 inoquendoosorio inoquendoosorio 28406 Oct 17 13:45 .bash_histo
ry
-rw-r--r-- 1 inoquendoosorio inoquendoosorio 220 Feb 23 2022 .bash_logou
t
-rw-r--r-- 1 inoquendoosorio inoquendoosorio 4012 Feb 24 2022 .bashrc
```