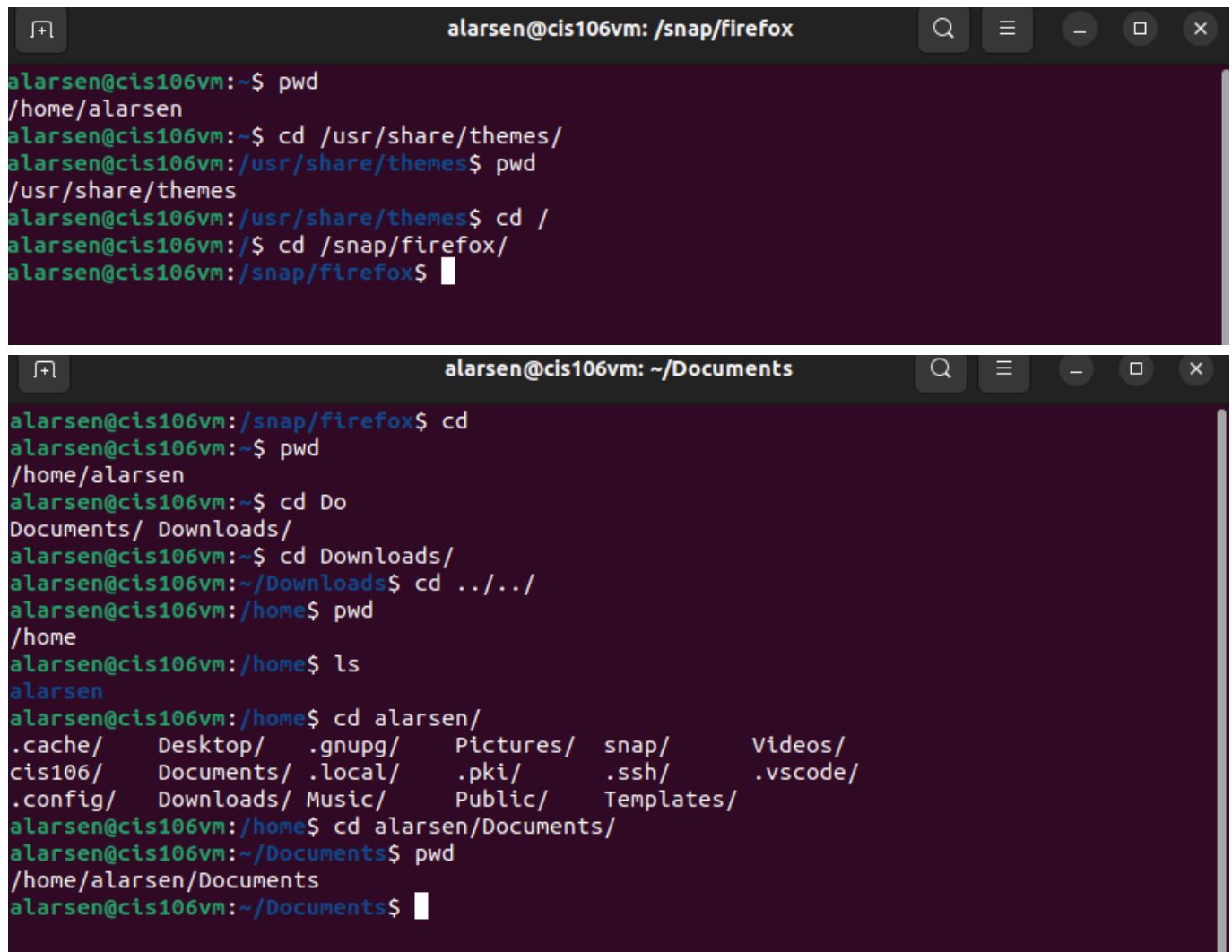


Lab 4 Submission

Q1



The image shows two terminal windows. The first window, titled 'alarsen@cis106vm: /snap/firefox', shows a sequence of commands: 'pwd' (returns /home/alarsen), 'cd /usr/share/themes/' (returns /usr/share/themes), 'pwd' (returns /usr/share/themes), 'cd /' (returns /), 'cd /snap/firefox/' (returns /snap/firefox), and the prompt is ready for the next command. The second window, titled 'alarsen@cis106vm: ~/Documents', shows a sequence of commands: 'cd' (returns /snap/firefox), 'pwd' (returns /home/alarsen), 'cd Do' (returns Documents/ Downloads/), 'cd Downloads/' (returns ~/Downloads), 'cd ../../' (returns /home), 'pwd' (returns /home), 'ls' (lists contents of /home), 'cd alarsen/' (returns /home/alarsen), and 'cd alarsen/Documents/' (returns ~/Documents). The 'ls' command output is as follows:

```
alarsen@cis106vm:/home$ ls
alarsen
.cache/   Desktop/  .gnupg/   Pictures/  snap/     Videos/
cis106/   Documents/ .local/   .pki/     .ssh/    .vscode/
.config/  Downloads/ Music/     Public/   Templates/
```

Q2

```

alarsen@cis106vm:/home$ cd alarsen/Documents/
alarsen@cis106vm:~/Documents$ pwd
/home/alarsen/Documents
alarsen@cis106vm:~/Documents$ cd /usr/share/
alarsen@cis106vm:/usr/share$ ls /home/alarsen/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv     globe.avi      Linux.pdf     Tux.png     website.html
alarsen@cis106vm:/usr/share$ cd /home/alarsen/lab4files/
alarsen@cis106vm:~/lab4files$ ls -l
total 6580
-rw-rw-r-- 1 alarsen alarsen 20471 Feb 22 2022 countries.json
-rw-rw-r-- 1 alarsen alarsen 284042 Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 alarsen alarsen 764176 Feb 22 2022 document.docx
-rw-rw-r-- 1 alarsen alarsen 742478 Feb 22 2022 globe.avi
-rw-rw-r-- 1 alarsen alarsen 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 alarsen alarsen 2600138 Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 alarsen alarsen 8704 Feb 22 2022 sample.xls
-rw-rw-r-- 1 alarsen alarsen 42777 Feb 22 2022 Tux.png
-rw-rw-r-- 1 alarsen alarsen 2114053 Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 alarsen alarsen 137453 Feb 22 2022 website.html
alarsen@cis106vm:~/lab4files$

```

```

alarsen@cis106vm: ~/lab4files
alarsen@cis106vm:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 alarsen alarsen 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 alarsen alarsen 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 alarsen alarsen 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 alarsen alarsen 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 alarsen alarsen 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 alarsen alarsen 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 alarsen alarsen 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 alarsen alarsen 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 alarsen alarsen 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 alarsen alarsen 135K Feb 22 2022 website.html
alarsen@cis106vm:~/lab4files$ ls -lrs
total 6.5M
-rw-rw-r-- 1 alarsen alarsen 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 alarsen alarsen 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 alarsen alarsen 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 alarsen alarsen 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 alarsen alarsen 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 alarsen alarsen 135K Feb 22 2022 website.html
-rw-rw-r-- 1 alarsen alarsen 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 alarsen alarsen 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 alarsen alarsen 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 alarsen alarsen 76 Feb 22 2022 helloWorld.c
alarsen@cis106vm:~/lab4files$

```

```
alarsen@cis106vm: ~/lab4files
alarsen@cis106vm:~/lab4files$ ls -lhSgGl
total 6.5M
537638 -rw-rw-r-- 1 2.5M Feb 22 2022 Linux.pdf
537670 -rw-rw-r-- 1 2.1M Feb 22 2022 Ubuntu.pdf
537848 -rw-rw-r-- 1 747K Feb 22 2022 document.docx
537849 -rw-rw-r-- 1 726K Feb 22 2022 globe.avi
537711 -rw-rw-r-- 1 278K Feb 22 2022 csvfile.csv
537852 -rw-rw-r-- 1 135K Feb 22 2022 website.html
537667 -rw-rw-r-- 1 42K Feb 22 2022 Tux.png
537671 -rw-rw-r-- 1 20K Feb 22 2022 countries.json
537851 -rw-rw-r-- 1 8.5K Feb 22 2022 sample.xls
537850 -rw-rw-r-- 1 76 Feb 22 2022 helloWorld.c
alarsen@cis106vm:~/lab4files$ ls -Xr
sample.xls  Tux.png  Ubuntu.pdf  Linux.pdf  countries.json  website.html  document.docx  csvfile.csv  helloWorld.c  globe.avi
alarsen@cis106vm:~/lab4files$
```

Question 3

```
alarsen@cis106vm: ~/Downloads

alarsen@cis106vm: ~/Downloads
alarsen@cis106vm:~$ cd /etc/
alarsen@cis106vm:/etc$ tree ~/lab4files/
/home/alarsen/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
alarsen@cis106vm:/etc$ cd ~/Downloads/
alarsen@cis106vm:~/Downloads$ tree -fph ../lab4files/
[drwxrwxr-x 4.0K] ../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
alarsen@cis106vm:~/Downloads$
```

```
alarsen@cis106vm: ~/Downloads

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

0 directories, 10 files
alarsen@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
```

```
alarsen@cis106vm: ~/Downloads
```

```
alarsen@cis106vm: ~/Downloads  alarsen@cis106vm: ~/lab4files
```

```
alarsen@cis106vm:~/Downloads$ exa ~/lab4files/ -l
```

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

```
alarsen@cis106vm:~/Downloads$ exa ~/lab4files/ -lh
```

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

```
alarsen@cis106vm:~/Downloads$
```

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

```
alarsen@cis106vm:~/Downloads$ exa ~/lab4files/ -lh --no-user -U
```

Permissions	Size	Date Created	Name
.rw-rw-r--	20k	14 Oct 09:35	countries.json
.rw-rw-r--	284k	14 Oct 09:35	csvfile.csv
.rw-rw-r--	764k	14 Oct 09:35	document.docx
.rw-rw-r--	742k	14 Oct 09:35	globe.avi
.rw-rw-r--	76	14 Oct 09:35	helloWorld.c
.rw-rw-r--	2.6M	14 Oct 09:35	Linux.pdf
.rw-rw-r--	8.7k	14 Oct 09:35	sample.xls
.rw-rw-r--	43k	14 Oct 09:35	Tux.png
.rw-rw-r--	2.1M	14 Oct 09:35	Ubuntu.pdf
.rw-rw-r--	137k	14 Oct 09:35	website.html

```
alarsen@cis106vm:~/Downloads$
```

Question 4: Challenge Question