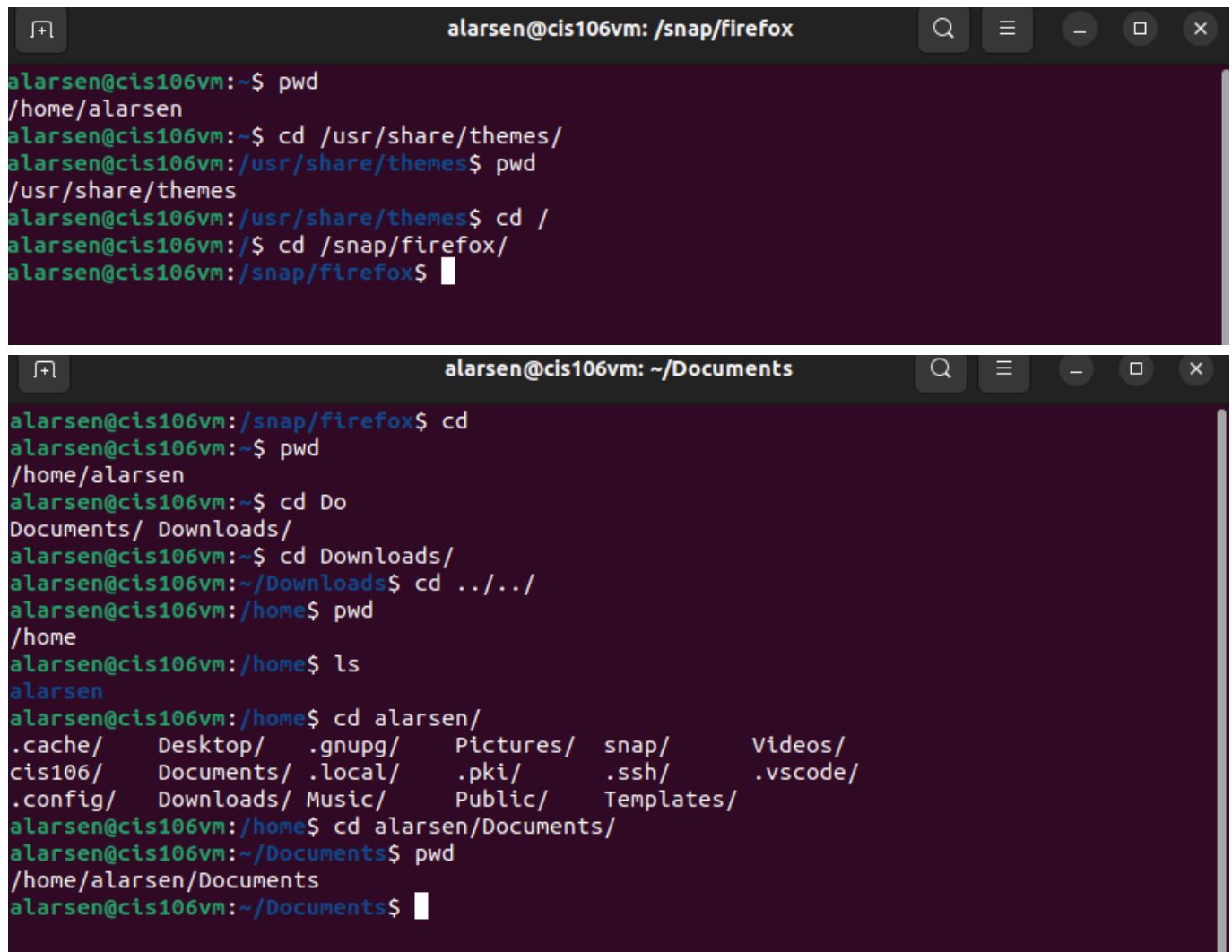


Lab 4 Submission

Q1



The image shows two terminal windows from a virtual machine named 'alarsen@cis106vm'.

The first terminal window has the title 'alarsen@cis106vm: /snap/firefox'. The command history is as follows:
alarsen@cis106vm:~\$ pwd
/home/alarsen
alarsen@cis106vm:~\$ cd /usr/share/themes/
alarsen@cis106vm:/usr/share/themes\$ pwd
/usr/share/themes
alarsen@cis106vm:/usr/share/themes\$ cd /
alarsen@cis106vm:/\$ cd /snap/firefox/
alarsen@cis106vm:/snap/firefox\$

The second terminal window has the title 'alarsen@cis106vm: ~/Documents'. The command history is as follows:
alarsen@cis106vm:/snap/firefox\$ cd
alarsen@cis106vm:~\$ pwd
/home/alarsen
alarsen@cis106vm:~\$ cd Do
Documents/ Downloads/
alarsen@cis106vm:~\$ cd Downloads/
alarsen@cis106vm:~/Downloads\$ cd ../../
alarsen@cis106vm:/home\$ pwd
/home
alarsen@cis106vm:/home\$ ls
alarsen
alarsen@cis106vm:/home\$ cd alarsen/
.cache/ Desktop/ .gnupg/ Pictures/ snap/ Videos/
cis106/ Documents/ .local/ .pki/ .ssh/ .vscode/
.config/ Downloads/ Music/ Public/ Templates/
alarsen@cis106vm:/home\$ cd alarsen/Documents/
alarsen@cis106vm:~/Documents\$ pwd
/home/alarsen/Documents
alarsen@cis106vm:~/Documents\$

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 -lhs
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$ exa ~/lab4files/ -l
```

Permissions	Size	User	Date	Time	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
```

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
```

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

```
alarsen@cis106vm: ~  
alarsen@cis106vm:~$ pwd  
/home/alarsen  
alarsen@cis106vm:~$  
  
alarsen@cis106vm: /usr/share/icons/default  
alarsen@cis106vm:~$ pwd  
/home/alarsen  
alarsen@cis106vm:~$ cd /usr/share/icons/default  
alarsen@cis106vm:/usr/share/icons/default$  
  
alarsen@cis106vm:/usr/share/icons/default$ cd /proc/sys/net/ipv4  
alarsen@cis106vm:/proc/sys/net/ipv4$ cd -  
/usr/share/icons/default  
alarsen@cis106vm:/usr/share/icons/default$  
  
alarsen@cis106vm: /usr/share/backgrounds  
alarsen@cis106vm:/usr/share/backgrounds$ cd /usr/share/backgrounds/  
alarsen@cis106vm:/usr/share/backgrounds$ ls -a  
.  
..  
Blue_flower_by_Elena_Stravoravdi.jpg  
canvas_by_roytanck.jpg  
Cherry_Tree_in_Lakones_by_elenastravoravdi.jpg  
contest  
DSC2943_by_kcpru.jpg  
Jammy-Jellyfish_WP_4096x2304_Grey.png  
jj_dark_by_Hiking93.jpg  
jj_light_by_Hiking93.jpg  
Mirror_by_Uday_Nakade.jpg  
Optical_Fibers_in_Dark_by_Elena_Stravoravdi.jpg  
ubuntu2_by_arman1992.jpg  
ubuntu_by_arman1992.jpg  
ubuntu-default-greyscale-wallpaper.png  
warty-final-ubuntu.png  
alarsen@cis106vm:/usr/share/backgrounds$  
  
alarsen@cis106vm:~$ cd /home/alarsen/  
.cache/ Desktop/ .gnupg/ Music/ Public/ Templates/  
cis106/ Documents/ lab4files/ Pictures/ snap/ Videos/  
.config/ Downloads/ .local/ .pki/ .ssh/ .vscode/  
alarsen@cis106vm:~$ cd /home/alarsen/cis106/  
alarsen@cis106vm:~/cis106$ ls -A  
cheatSheets .git labs .vscode weeklyReports  
alarsen@cis106vm:~/cis106$
```

```
alarsen@cis106vm:~/cis106$ cd /home/alarsen/
alarsen@cis106vm:~$ cd /home/alarsen/
.cache/ Desktop/ .gnupg/ Music/ Public/ Templates/
cis106/ Documents/ lab4files/ Pictures/ snap/ Videos/
.config/ Downloads/ .local/ .pki/ .ssh/ .vscode/
alarsen@cis106vm:~$ cd /home/alarsen/Downloads/
alarsen@cis106vm:~/Downloads$ ls -A
lab4files.zip 'Source_Code_Pro(1).zip' Source_Code_Pro.zip
alarsen@cis106vm:~/Downloads$
```

```
alarsen@cis106vm:/usr/share$ cd /usr/share/themes/
alarsen@cis106vm:/usr/share/themes$ ls -t
Yaru Yaru-blue Yaru-dark-hdpi Yaru-magenta Yaru-olive-dark Yaru-purple Yaru-red-dark Yaru-viridian Default Adwaita
Yaru-bark Yaru-blue-dark Yaru-dark-xhdpi Yaru-magenta-dark Yaru-prusstangreen Yaru-purple-dark Yaru-sage Yaru-viridian-dark Enacs Adwaita-dark
Yaru-bark-dark Yaru-dark Yaru-hdpi Yaru-olive Yaru-prusstangreen-dark Yaru-red Yaru-sage-dark Yaru-xhdpi Raleigh HighContrast
alarsen@cis106vm:/usr/share/themes$
```

```
alarsen@cis106vm:/usr/share$ la --sort extension
accounts-service  gnome-shell  perl
local            gnome-software  perl5
api-support      gnome-system-monitor  perl-openssl-defaults
adduser          gnome-todo    pipewire
alsertot         gnome-tweaks  pixmaps
liscarte         gnome-video-effects  pkgconfig
alsa             gnupg         plymouth
alsa-base        grilo-plugins  pnm2ppa
alsa-card-profile  groff         pocketsphinx
appdata          grub          polkit-1
app-info         grub-gfxpayload-lists  poppler
applications      gst-plugins-base  ppp
apport           gtk-doc       publicsuffix
aps              gtk-engines   pulseaudio
apturl           gtksourceview-4  pyshared
aspell           guftp-av       python3
ashit            grfs           python-apt
backgrounds      help           qt5
base-files       help-langpack  readline
base-passwd      hplip          renmin
bash-completion  hunspell       rhythmbox
binfmts          hwdetect       rig
branding         hyphen         rsync
bttty            i18n           rsyslog
bug              ibus           rubygems-integration
build-essential  ibus-table     sgml
certificates     icons          samba
coffee-indicator  imageMagick-6  seahorse
ctdoc            im-config     secureboot
cmake            indicator-application  sensible-utils
cmake            indicator-power  session-migration
color            indicators     sgml
color            info          sgml-base
common-licenses  initramfs-tools  sgml-data
consolefonts     installed-tests  snmp
console-setup    lpp-usb        software-properties
consoletrans     iptables       solid
cowsay           iso-codes      sounds
cups             java           source-highlight
dbus-1           javascript     speech-dispatcher
conf            kde            ssl-cert
debconf          keyrings       system-config-printer
debhelper        language-selector  systemd
debianutils      language-support  systentap
defaults         language-tools  ...
```