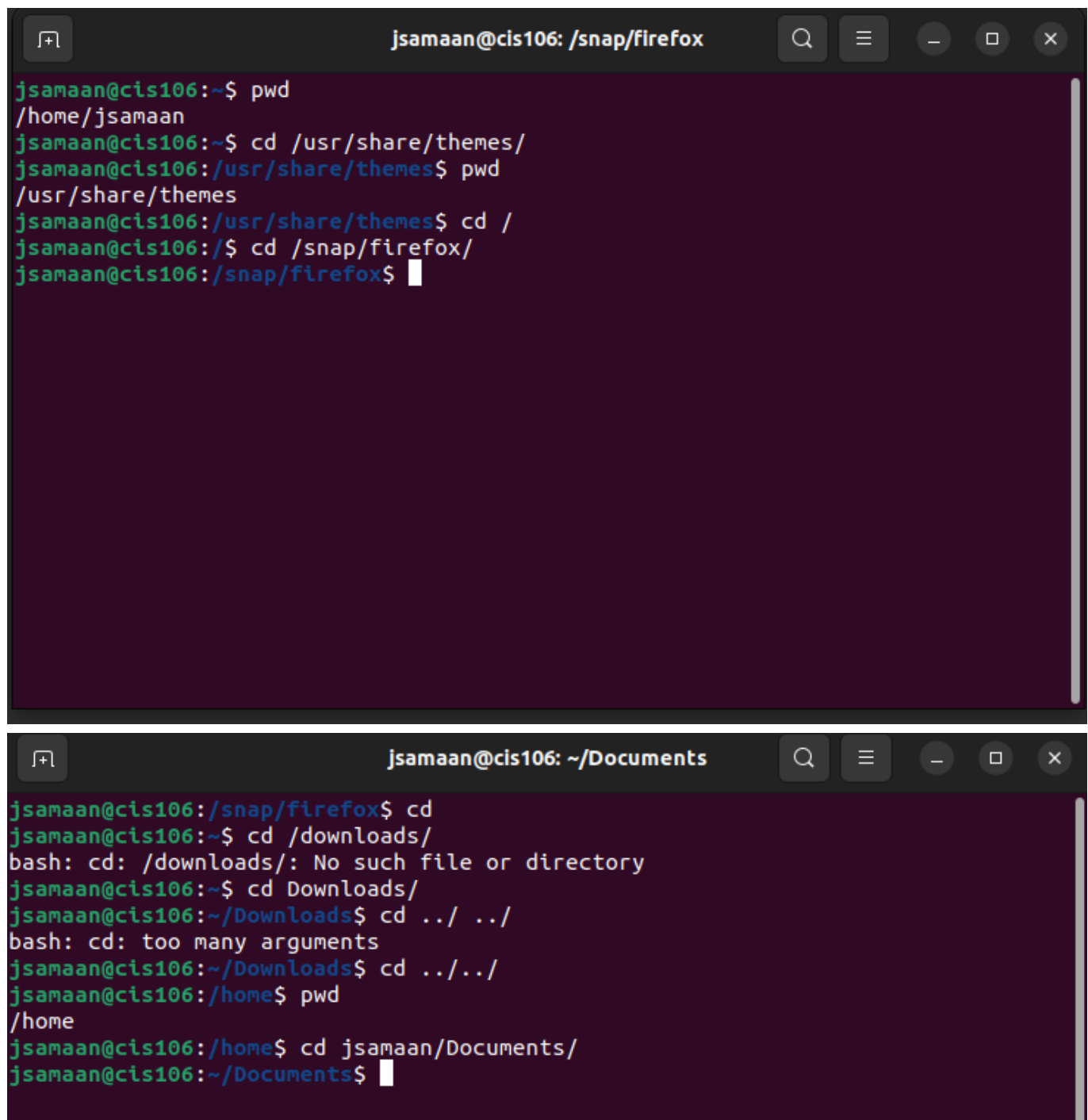


Lab 4 The Linux FS

Question 1



The image shows two terminal windows from a user named jsamaan on a machine named cis106. The top window shows the user navigating from their home directory to /usr/share/themes and then to /snap/firefox. The bottom window shows the user attempting to navigate to /downloads/ (which fails), then to ~/Downloads/ (which also fails due to too many arguments), and finally successfully navigating to ~/Documents/.

```
jsamaan@cis106: ~/snap/firefox
jsamaan@cis106:~$ pwd
/home/jsamaan
jsamaan@cis106:~$ cd /usr/share/themes/
jsamaan@cis106:/usr/share/themes$ pwd
/usr/share/themes
jsamaan@cis106:/usr/share/themes$ cd /
jsamaan@cis106:/$ cd /snap/firefox/
jsamaan@cis106:/snap/firefox$
```

```
jsamaan@cis106: ~/Documents
jsamaan@cis106:/snap/firefox$ cd
jsamaan@cis106:~$ cd /downloads/
bash: cd: /downloads/: No such file or directory
jsamaan@cis106:~$ cd Downloads/
jsamaan@cis106:~/Downloads$ cd ../ ../
bash: cd: too many arguments
jsamaan@cis106:~/Downloads$ cd ../../
jsamaan@cis106:/home$ pwd
/home
jsamaan@cis106:/home$ cd jsamaan/Documents/
jsamaan@cis106:~/Documents$
```

Question 2

```

jsamaan@cis106:~/Documents$ cd
jsamaan@cis106:~$ cd /usr/share/
jsamaan@cis106:/usr/share$ ls /home/jsamaan/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv     globe.avi      Linux.pdf     Tux.png     website.html
jsamaan@cis106:/usr/share$ ~/lab4files/
bash: /home/jsamaan/lab4files/: Is a directory
jsamaan@cis106:/usr/share$ cd ~/lab4files/
jsamaan@cis106:~/lab4files$ ls -l
total 6580
-rw-rw-r-- 1 jsamaan jsamaan 20471 Feb 22 2022 countries.json
-rw-rw-r-- 1 jsamaan jsamaan 284042 Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 jsamaan jsamaan 764176 Feb 22 2022 document.docx
-rw-rw-r-- 1 jsamaan jsamaan 742478 Feb 22 2022 globe.avi
-rw-rw-r-- 1 jsamaan jsamaan 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 jsamaan jsamaan 2600138 Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 jsamaan jsamaan 8704 Feb 22 2022 sample.xls
-rw-rw-r-- 1 jsamaan jsamaan 42777 Feb 22 2022 Tux.png
-rw-rw-r-- 1 jsamaan jsamaan 2114053 Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 jsamaan jsamaan 137453 Feb 22 2022 website.html
jsamaan@cis106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 jsamaan jsamaan 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 jsamaan jsamaan 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 jsamaan jsamaan 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 jsamaan jsamaan 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 jsamaan jsamaan 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 jsamaan jsamaan 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 jsamaan jsamaan 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 jsamaan jsamaan 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 jsamaan jsamaan 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 jsamaan jsamaan 135K Feb 22 2022 website.html
jsamaan@cis106:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 jsamaan jsamaan 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 jsamaan jsamaan 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 jsamaan jsamaan 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 jsamaan jsamaan 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 jsamaan jsamaan 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 jsamaan jsamaan 135K Feb 22 2022 website.html
-rw-rw-r-- 1 jsamaan jsamaan 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 jsamaan jsamaan 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 jsamaan jsamaan 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 jsamaan jsamaan 76 Feb 22 2022 helloWorld.c
jsamaan@cis106:~/lab4files$ ls -lhSG
total 6.5M
-rw-rw-r-- 1 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 135K Feb 22 2022 website.html
-rw-rw-r-- 1 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 76 Feb 22 2022 helloWorld.c
jsamaan@cis106:~/lab4files$ ls -Xr
sample.xls  Tux.png  Ubuntu.pdf  Linux.pdf  countries.json  website.html  document.docx  csvfile.csv  helloWorld.c  globe.avi
jsamaan@cis106:~/lab4files$

```

Question 4

```
jsamaan@cis106:~$ pwd
/home/jsamaan
jsamaan@cis106:~$ cd /usr/
jsamaan@cis106:/usr$ cd /proc/sys
sys/      sysvipc/
jsamaan@cis106:/usr$ cd /proc/sys/net/ipv4
jsamaan@cis106:/proc/sys/net/ipv4$ cd ..
jsamaan@cis106:/proc/sys/net$ cd ../
jsamaan@cis106:/proc/sys$ cd
jsamaan@cis106:~$ cd /usr/share/backgrounds/
jsamaan@cis106:/usr/share/backgrounds$ ls
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
jsamaan@cis106:/usr/share/backgrounds$ cd
```

```
jsamaan@cis106:~$ pwd
/home/jsamaan
jsamaan@cis106:~$ cd /usr/
jsamaan@cis106:/usr$ cd /proc/sys
sys/      sysvipc/
jsamaan@cis106:/usr$ cd /proc/sys/net/ipv4
jsamaan@cis106:/proc/sys/net/ipv4$ cd ..
jsamaan@cis106:/proc/sys/net$ cd ../
jsamaan@cis106:/proc/sys$ cd
jsamaan@cis106:~$ cd /usr/share/backgrounds/
jsamaan@cis106:/usr/share/backgrounds$ ls
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
jsamaan@cis106:/usr/share/backgrounds$ cd
jsamaan@cis106:~$ cd /usr/home/cis106/
bash: cd: /usr/home/cis106/: No such file or directory
jsamaan@cis106:~$ cd /home/cis106/
bash: cd: /home/cis106/: No such file or directory
```

```
jsamaan@cis106:~$ cd /usr/home/  
bash: cd: /usr/home/: No such file or directory  
jsamaan@cis106:~$ pwd  
/home/jsamaan  
jsamaan@cis106:~$ cd /usr/cis106/  
bash: cd: /usr/cis106/: No such file or directory  
jsamaan@cis106:~$ cd /usr/home/jsamaan/cis106/  
bash: cd: /usr/home/jsamaan/cis106/: No such file or directory  
jsamaan@cis106:~$ cd /home/jsamaan/cis106/  
jsamaan@cis106:~/cis106$ ls  
cheatsheets  labs  weekReports
```

```
jsamaan@cis106:~/cis106$ ls
cheatsheets  labs  weekReports
jsamaan@cis106:~/cis106$ cd
jsamaan@cis106:~$ pwd
/home/jsamaan
jsamaan@cis106:~$ cd /home/jsamaan/Downloads/
jsamaan@cis106:~/Downloads$ ls
archive.zip          'Virtual machine(1).PNG'
code_1.82.3-1696245001_amd64.deb 'Virtual machine(2).PNG'
lab4files.zip        'Virtual machine.PNG'
q1.3.odp
jsamaan@cis106:~/Downloads$ cd /dev/disk/by-id/
jsamaan@cis106:/dev/disk/by-id$ ls -l
total 0
lrwxrwxrwx 1 root root  9 Oct 24 13:07 ata-VBOX_CD-ROM_VB2-01700376 -> ../../sr0
lrwxrwxrwx 1 root root  9 Oct 24 13:07 ata-VBOX_HARDDISK_VBf7f863e9-27342305 -> ../../sda
lrwxrwxrwx 1 root root 10 Oct 24 13:07 ata-VBOX_HARDDISK_VBf7f863e9-27342305-part1 -> ../../sda1
lrwxrwxrwx 1 root root 10 Oct 24 13:07 ata-VBOX_HARDDISK_VBf7f863e9-27342305-part2 -> ../../sda2
lrwxrwxrwx 1 root root 10 Oct 24 13:07 ata-VBOX_HARDDISK_VBf7f863e9-27342305-part3 -> ../../sda3
jsamaan@cis106:/dev/disk/by-id$
```

```

jsamaan@cis106:/dev/disk/by-id$ cd /usr/share/themes/
jsamaan@cis106:/usr/share/themes$ ls -t
Yaru                    Yaru-magenta-dark        Yaru-sage-dark
Yaru-bark               Yaru-olive                Yaru-viridian
Yaru-bark-dark          Yaru-olive-dark          Yaru-viridian-dark
Yaru-blue               Yaru-prussiangreen       Yaru-xhdpi
Yaru-blue-dark          Yaru-prussiangreen-dark  Default
Yaru-dark               Yaru-purple               Emacs
Yaru-dark-hdpi          Yaru-purple-dark         Raleigh
Yaru-dark-xhdpi         Yaru-red                 Adwaita
Yaru-hdpi               Yaru-red-dark            Adwaita-dark
Yaru-magenta            Yaru-sage                 HighContrast
jsamaan@cis106:/usr/share/themes$ cd .
jsamaan@cis106:/usr/share/themes$ cd /usr/share/
jsamaan@cis106:/usr/share$ ls -X
accountsservice          libdebuginfod-common
aclocal                  libdrm
acpi-support             libexttextcat
adduser                  libgnomekbd
aisleriot                libgweather
alacarte                 libgweather-4
alsa                    libinput
alsa-base                liblangtag
alsa-card-profile        liblouis
appdata                  liblouisutdm
app-info                 libmysofa
applications             libreoffice
apport                  libvenge
apps                     libthai
apturl                   libwacom
aspell                   lightdm
avahi                    lintian
backgrounds              linux-sound-base
base-files               locale
base-passwd              locale-langpack
bash-completion          locales
binfmts                  lto-disabled-list
branding                  m2300w
brlty                    man
bug                       man-db
build-essential          mate-panel
ca-certificates           maven-repo
caffeine-indicator        media-player-info
catdoc                   menu
cmake                     mesa-demos
code                      metainfo
cogl                      mfx
color                     mime
colord                    misc

```

Question 5

```
jsamaan@cis106:~$ pwd
/home/jsamaan
jsamaan@cis106:~$ cd ../../
jsamaan@cis106:/$ pwd
/
jsamaan@cis106:/$ cd /home/
jsamaan@cis106:/home$ cd /home/jsamaan/
jsamaan@cis106:~$ cd /home/jsamaan/Downloads/
jsamaan@cis106:~/Downloads$
```

```
jsamaan@cis106: ~/Documents
jsamaan@cis106:~/Downloads$ cd /usr/share/themes/Adwaita/
jsamaan@cis106:/usr/share/themes/Adwaita$ cd /home/jsamaan/Documents/
jsamaan@cis106:~/Documents$ pwd
/home/jsamaan/Documents
jsamaan@cis106:~/Documents$
```