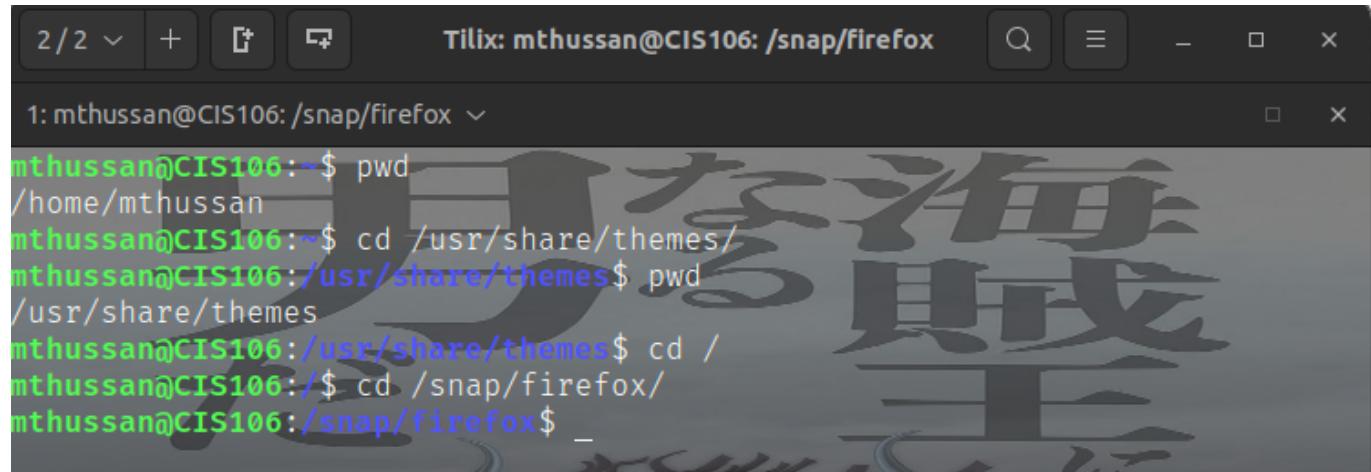


Lab 4 The Linux FS

Question 1



```
2 / 2  +  Tilix: mthussan@CIS106: /snap/firefox  -  ×  
1: mthussan@CIS106: /snap/firefox ~  
mthussan@CIS106:~$ pwd  
/home/mthussan  
mthussan@CIS106:~$ cd /usr/share/themes/  
mthussan@CIS106:/usr/share/themes$ pwd  
/usr/share/themes  
mthussan@CIS106:/usr/share/themes$ cd /  
mthussan@CIS106:/$ cd /snap/firefox/  
mthussan@CIS106:/snap/firefox$ _
```

q1.2

Question 2

```
1/1 + ⌂ ⌂ Tilix: mthussan@CIS106: ~/lab4files Q ⌂ ⌂ ×  
1: mthussan@CIS106: ~/lab4files ~  
mthussan@CIS106:~/Documents$ cd /usr/share/  
mthussan@CIS106:/usr/share$ ls /home/mthussan/lab4files/  
countries.json document.docx helloWorld.c sample.xls Ubuntu.pdf  
csvfile.csv globe.avi Linux.pdf Tux.png website.html  
mthussan@CIS106:/usr/share$ cd ~/lab4files/  
mthussan@CIS106:~/lab4files$ ls -l  
total 6580  
-rw-rw-r-- 1 mthussan mthussan 20471 Feb 22 2022 countries.json  
-rw-rw-r-- 1 mthussan mthussan 284042 Feb 22 2022 csvfile.csv  
-rw-rw-r-- 1 mthussan mthussan 764176 Feb 22 2022 document.docx  
-rw-rw-r-- 1 mthussan mthussan 742478 Feb 22 2022 globe.avi  
-rw-rw-r-- 1 mthussan mthussan 76 Feb 22 2022 helloWorld.c  
-rw-rw-r-- 1 mthussan mthussan 2600138 Feb 22 2022 Linux.pdf  
-rw-rw-r-- 1 mthussan mthussan 8704 Feb 22 2022 sample.xls  
-rw-rw-r-- 1 mthussan mthussan 42777 Feb 22 2022 Tux.png  
-rw-rw-r-- 1 mthussan mthussan 2114053 Feb 22 2022 Ubuntu.pdf  
-rw-rw-r-- 1 mthussan mthussan 137453 Feb 22 2022 website.html
```

```
1: mthussan@CIS106: ~/lab4files ~  
mthussan@CIS106:~/Lab4files$ ls -lh  
total 6.5M  
-rw-rw-r-- 1 mthussan mthussan 20K Feb 22 2022 countries.json  
-rw-rw-r-- 1 mthussan mthussan 278K Feb 22 2022 csvfile.csv  
-rw-rw-r-- 1 mthussan mthussan 747K Feb 22 2022 document.docx  
-rw-rw-r-- 1 mthussan mthussan 726K Feb 22 2022 globe.avi  
-rw-rw-r-- 1 mthussan mthussan 76 Feb 22 2022 helloWorld.c  
-rw-rw-r-- 1 mthussan mthussan 2.5M Feb 22 2022 Linux.pdf  
-rw-rw-r-- 1 mthussan mthussan 8.5K Feb 22 2022 sample.xls  
-rw-rw-r-- 1 mthussan mthussan 42K Feb 22 2022 Tux.png  
-rw-rw-r-- 1 mthussan mthussan 2.1M Feb 22 2022 Ubuntu.pdf  
-rw-rw-r-- 1 mthussan mthussan 135K Feb 22 2022 website.html
```

```
1: mthussan@CIS106: ~/lab4files ~  
mthussan@CIS106:~/Lab4files$ ls -lhS  
total 6.5M  
-rw-rw-r-- 1 mthussan mthussan 2.5M Feb 22 2022 Linux.pdf  
-rw-rw-r-- 1 mthussan mthussan 2.1M Feb 22 2022 Ubuntu.pdf  
-rw-rw-r-- 1 mthussan mthussan 747K Feb 22 2022 document.docx  
-rw-rw-r-- 1 mthussan mthussan 726K Feb 22 2022 globe.avi  
-rw-rw-r-- 1 mthussan mthussan 278K Feb 22 2022 csvfile.csv  
-rw-rw-r-- 1 mthussan mthussan 135K Feb 22 2022 website.html  
-rw-rw-r-- 1 mthussan mthussan 42K Feb 22 2022 Tux.png  
-rw-rw-r-- 1 mthussan mthussan 20K Feb 22 2022 countries.json  
-rw-rw-r-- 1 mthussan mthussan 8.5K Feb 22 2022 sample.xls  
-rw-rw-r-- 1 mthussan mthussan 76 Feb 22 2022 helloWorld.c
```

```
1: mthussan@CIS106: ~/lab4files ~
mthussan@CIS106:~/lab4files$ ls -lhSgG
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

mthussan@CIS106:~/lab4files$ ls -lhSgGi
total 6.5M
1337969 -rw-rw-r-- 1 2.5M Feb 22 2022 Linux.pdf
1337973 -rw-rw-r-- 1 2.1M Feb 22 2022 Ubuntu.pdf
1337980 -rw-rw-r-- 1 747K Feb 22 2022 document.docx
1337983 -rw-rw-r-- 1 726K Feb 22 2022 globe.avi
1337978 -rw-rw-r-- 1 278K Feb 22 2022 csvfile.csv
1338362 -rw-rw-r-- 1 135K Feb 22 2022 website.html
1337971 -rw-rw-r-- 1 42K Feb 22 2022 Tux.png
1337975 -rw-rw-r-- 1 20K Feb 22 2022 countries.json
1338019 -rw-rw-r-- 1 8.5K Feb 22 2022 sample.xls
1337985 -rw-rw-r-- 1 76 Feb 22 2022 helloWorld.c

mthussan@CIS106:~/lab4files$ ls -Xr
sample.xls Ubuntu.pdf countries.json document.docx helloWorld.c
Tux.png Linux.pdf website.html csvfile.csv globe.avi
mthussan@CIS106:~/lab4files$ _
```

Question 4

```
1: mthussan@CIS106: ~/Downloads ~
mthussan@CIS106: /usr$ pwd
/usr
mthussan@CIS106: /usr$ cd /usr/
mthussan@CIS106: /usr$ cd /proc/net/ipv4
bash: cd: /proc/net/ipv4: No such file or directory
mthussan@CIS106: /usr$ cd -
/usr
mthussan@CIS106: /usr$ ls /usr/share/backgrounds/
contest
Kinetic_Kudu_by_Joshua_T_dark.jpg
Kinetic_Kudu_by_Joshua_T_light.jpg
Kudu_Wallpaper_Grey_4096x2304.png
Obersee_by_Uday_Nakade.jpg
Reflection_by_Juliette_Taka.png
Saffron_by_Rakesh_Yadav.png
Sunset_Over_Lake_Lugano_by_Alexey_Kulik.jpg
Twisted_Gradients_by_Gustavo_Brenner.png
ubuntu-default-greyscale-wallpaper.png
warty-final-ubuntu.png
mthussan@CIS106: /usr$ ls ~/cis106/
cheatSheets finalProject labs weekReports
```

```
1: mthussan@CIS106: ~/Downloads ~
mthussan@CIS106: /usr$ cd ~/Downloads/ && ls -la ~/
total 164
drwxr-x--- 22 mthussan mthussan 4096 Mar 18 19:26 .
drwxr-xr-x  3 root    root     4096 Feb 14 15:03 ..
-rw-----  1 mthussan mthussan 2836 Mar 18 19:29 .bash_history
-rw-r--r--  1 mthussan mthussan  220 Feb 14 15:03 .bash_logout
-rw-r--r--  1 mthussan mthussan 3771 Feb 14 15:03 .bashrc
drwx----- 23 mthussan mthussan 4096 Mar  4 12:34 .cache
drwxrwxr-x  7 mthussan mthussan 4096 Mar  8 17:48 cis106
-rw-rw-r--  1 mthussan mthussan 3520 Mar  3 20:59 .cis106.png
drwx----- 22 mthussan mthussan 4096 Mar 18 19:37 .config
drwxr-xr-x  2 mthussan mthussan 4096 Mar  3 21:08 Desktop
drwxr-xr-x  2 mthussan mthussan 4096 Feb 14 15:25 Documents
drwxrwxr-x  3 mthussan mthussan 4096 Feb 14 16:48 .dotnet
drwxr-xr-x  2 mthussan mthussan 4096 Mar 18 19:25 Downloads
drwxrwxr-x  2 mthussan mthussan 45056 Mar  4 11:45 .fonts
-rw-rw-r--  1 mthussan mthussan    72 Feb 14 17:30 .gitconfig
drwx----- 2 mthussan mthussan 4096 Mar  4 11:11 .gnupg
drwxrwxr-x  2 mthussan mthussan 4096 Feb 22 2022 lab4files
-rw-----  1 mthussan mthussan   20 Mar  4 12:38 .lessht
drwx----- 4 mthussan mthussan 4096 Feb 14 15:25 .local
drwxr-xr-x  2 mthussan mthussan 4096 Feb 14 15:25 Music
drwxr-xr-x  2 mthussan mthussan 4096 Mar 18 19:19 Pictures
```

```
1: mthussan@CIS106: ~/Downloads ~
drwx----- 3 mthussan mthussan 4096 Feb 14 16:46 .pki
-rw-r--r-- 1 mthussan mthussan 807 Feb 14 15:03 .profile
drwxr-xr-x 2 mthussan mthussan 4096 Feb 14 15:25 Public
drwx----- 5 mthussan mthussan 4096 Feb 14 16:35 snap
drwx----- 2 mthussan mthussan 4096 Feb 14 17:33 .ssh
-rw-r--r-- 1 mthussan mthussan 0 Feb 14 15:32 .sudo_as_admin_successful
drwxr-xr-x 2 mthussan mthussan 4096 Feb 14 15:25 Templates
drwxr-xr-x 2 mthussan mthussan 4096 Feb 14 15:25 videos
-rw----- 1 mthussan mthussan 532 Mar  4 12:26 .viminfo
drwxrwxr-x 3 mthussan mthussan 4096 Feb 14 16:46 .vscode
mthussan@CIS106:~/Downloads$ ls -lt /usr/share/themes/
total 120
drwxr-xr-x 7 root root 4096 Oct 20 03:08 Yaru
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-bark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-bark-dark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-blue
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-blue-dark
drwxr-xr-x 7 root root 4096 Oct 20 03:08 Yaru-dark
drwxr-xr-x 3 root root 4096 Oct 20 03:08 Yaru-dark-hdpi
drwxr-xr-x 3 root root 4096 Oct 20 03:08 Yaru-dark-xhdpi
drwxr-xr-x 3 root root 4096 Oct 20 03:08 Yaru-hdpi
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-magenta
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-magenta-dark
```

```
1: mthussan@CIS106: ~/Downloads ~
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-olive
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-olive-dark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-prussiangreen
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-prussiangreen-dark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-purple
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-purple-dark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-red
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-red-dark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-sage
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-sage-dark
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-viridian
drwxr-xr-x 5 root root 4096 Oct 20 03:08 Yaru-viridian-dark
drwxr-xr-x 3 root root 4096 Oct 20 03:08 Yaru-xhdpi
drwxr-xr-x 4 root root 4096 Oct 20 03:08 Default
drwxr-xr-x 4 root root 4096 Oct 20 03:08 Emacs
drwxr-xr-x 3 root root 4096 Oct 20 03:08 Raleigh
drwxr-xr-x 4 root root 4096 Oct 20 03:08 Adwaita
drwxr-xr-x 4 root root 4096 Oct 20 03:08 Adwaita-dark
drwxr-xr-x 4 root root 4096 Oct 20 03:07 HighContrast
```

```
1: mthussan@CIS106: ~/Downloads ~  
mthussan@CIS106:~/Downloads$ ls -X /usr/share/  
accountsservice  
aclocal  
adduser  
aisleriot  
alacarte  
alsa  
alsa-base  
alsa-card-profile  
appdata  
applications  
apport  
apps  
aspell  
avahi  
backgrounds  
base-files  
base-passwd  
bash-completion  
binfmts  
branding  
brltty  
bug  
libgweather-4  
libinput  
liblangtag  
liblouis  
liblouisutdml  
libmysofa  
libreoffice  
librevenge  
libthai  
libwacom  
lightdm  
lintian  
linux-sound-base  
locale  
locale-langpack  
locales  
lto-disabled-list  
m2300w  
man  
man-db  
mate-panel  
maven-repo
```

```
1: mthussan@CIS106: ~/Downloads ~  
build-essential  
ca-certificates  
caffeine-indicator  
catdoc  
cmake  
code  
cogl  
color  
colord  
common-licenses  
consolefonts  
console-setup  
consoletrans  
cowsay  
cups  
dbus-1  
dconf  
debconf  
debsign  
debhelper  
debianutils  
defaults  
desktop-directories  
dict  
media-player-info  
menu  
mesa-demos  
metainfo  
mfx  
mime  
misc  
mobile-broadband-provider-info  
ModemManager  
motd  
mousetweaks  
mythes  
nano  
nautilus  
nautilus-python  
nemo  
netpbm  
netplan  
networks  
numpy3  
open-vm-tools  
openvpn  
orca
```

```
1: mthussan@CIS106: ~/Downloads ~
```

```
dictionaries-common  
distro-info  
djvu  
dns  
dnsmasq-base  
doc  
doc-base  
dpkg  
emacs  
emacsclient-common  
enchant-2  
eog  
epiphany-browser  
evince  
evolution-data-server  
figlet  
file  
file-roller  
fish  
flameshot  
flatpak  
fontconfig  
fonts  
fonts-droid-fallback  
fonts-sil-abyssinica  
fonts-sil-padauk  
foo2qpdl  
foo2zjs  
fwupd  
gamemode  
games  
gcc  
gconf  
gdb  
gdm  
geany  
geary  
GeoIP  
gettext  
ghostscript  
git-core  
gitweb  
glade  
glvnd  
gnome  
gnome-applets  
os-prober  
p11-kit  
package-data-downloads  
PackageKit  
pam  
pam-configs  
perl  
perl5  
perl-openssl-defaults  
pipewire  
pixmaps  
pkgconfig  
plymouth  
pnmp2ppa  
pocketsphinx  
polkit-1  
poppler  
ppd  
ppp  
profile  
publicsuffix  
pulseaudio  
python3  
python-apt  
qlogging-categories5  
qt5  
readline  
remmina  
rhythmbox  
rig  
rsync  
rsyslog  
rubygems-integration  
rygel  
samba  
seahorse  
secureboot  
sensible-utils  
session-migration  
sgml  
sgml-base  
sgml-data  
snmp  
software-properties  
solid  
sounds
```

```
1: mthussan@CIS106: ~/Downloads ~
gnome-background-properties      source-highlight
gnome-control-center            speech-dispatcher
gnome-initial-setup              ssl-cert
gnome-logs                      staff-group-for-usr-local
gnome-mahjongg                   swcatalog
gnome-panel                      system-config-printer
gnome-remote-desktop             systemd
gnome-session                     systemtap
gnome-settings-daemon           tabset
gnome-shell                       tcltk
gnome-system-monitor             terminfo
gnome-text-editor                 themes
gnome-tweaks                      thumbnailers
gnome-video-effects               tilix
gnupg                            tracker3
grilo-plugins                     tracker3-miners
groff                           transmission
grub                            ubuntu
grub-gfxpayload-lists           ubuntu-drivers-common
gst-plugins-base                  ubuntu-release-upgrader
gtk-doc                          ubuntu-wayland
gtk-engines                      ucf
gtksourceview-4                  ufw
```

```
1: mthussan@CIS106: ~/Downloads ~
gtksourceview-5                  unattended-upgrades
guile                           unity
gupnp-av                         update-manager
gvfs                            update-notifier
help                            upstart
help-langpack                    usb-creator
imlib                           usb_modeswitch
ibus                            util-linux
ibus-table                      vala
icons                           vim
ImageMagick-6                   vlc
im-config                        vulkan
indicator-application           w3m
indicator-power                 wayland-sessions
indicators                       wireplumber
info                            X11
initramfs-tools                  xapps-common
installed-tests                  xdg-desktop-portal
ipp-usb                          xml
yelp-usb                         xsessions
yelp-usb                         yelp
yelp-usb                         yelp-xsl
```

```
ipp-usb          yelp-xsl
iptables        zenity
iso-codes       zoneinfo
java            zoneinfo-icu
javascript      zsh
kconf_update    gir-1.0
kde4            glib-2.0
keyrings        gnome-bluetooth-3.0
kf5             gstreamer-1.0
knotifications5 gtk-4.0
kservices5      gtksourceview-2.0
kservicetypes5 gtksourceview-3.0
language-selector gupnp-dlna-2.0
language-support spa-0.2
language-tools   dot.bashrc
libcaca         org.gnome.Characters
libc-bin         drirc.d
libdebuginfod-common info.dir
libdrm           config.kcfg
libexttextcat   dot.profile.md5sums
libgcrypt20     profile.md5sums
libgnomekbd     dot.profile
mthussan@CIS106:~/Downloads$ _
```

Question 5

```
1: mthussan@CIS106: ~/Downloads ~
mthussan@CIS106:~/Downloads$ cd /
mthussan@CIS106:/$ cd home/
mthussan@CIS106:/home$ cd mthussan/
mthussan@CIS106:~$ cd Downloads/
mthussan@CIS106:~/Downloads$ pwd
/home/mthussan/Downloads
mthussan@CIS106:~/Downloads$ _
```

```
1: mthussan@CIS106: /usr/share/themes/Adwaita ~
mthussan@CIS106:/home$ cd /usr/share/themes/Adwaita
mthussan@CIS106:/usr/share/themes/Adwaita$ cd ../../../../../../home/mthussan/Documents/
bash: cd: ../../../../../../home/mthussan/Documents/: No such file or directory
mthussan@CIS106:/usr/share/themes/Adwaita$ pwd
/usr/share/themes/Adwaita
mthussan@CIS106:/usr/share/themes/Adwaita$ _
```