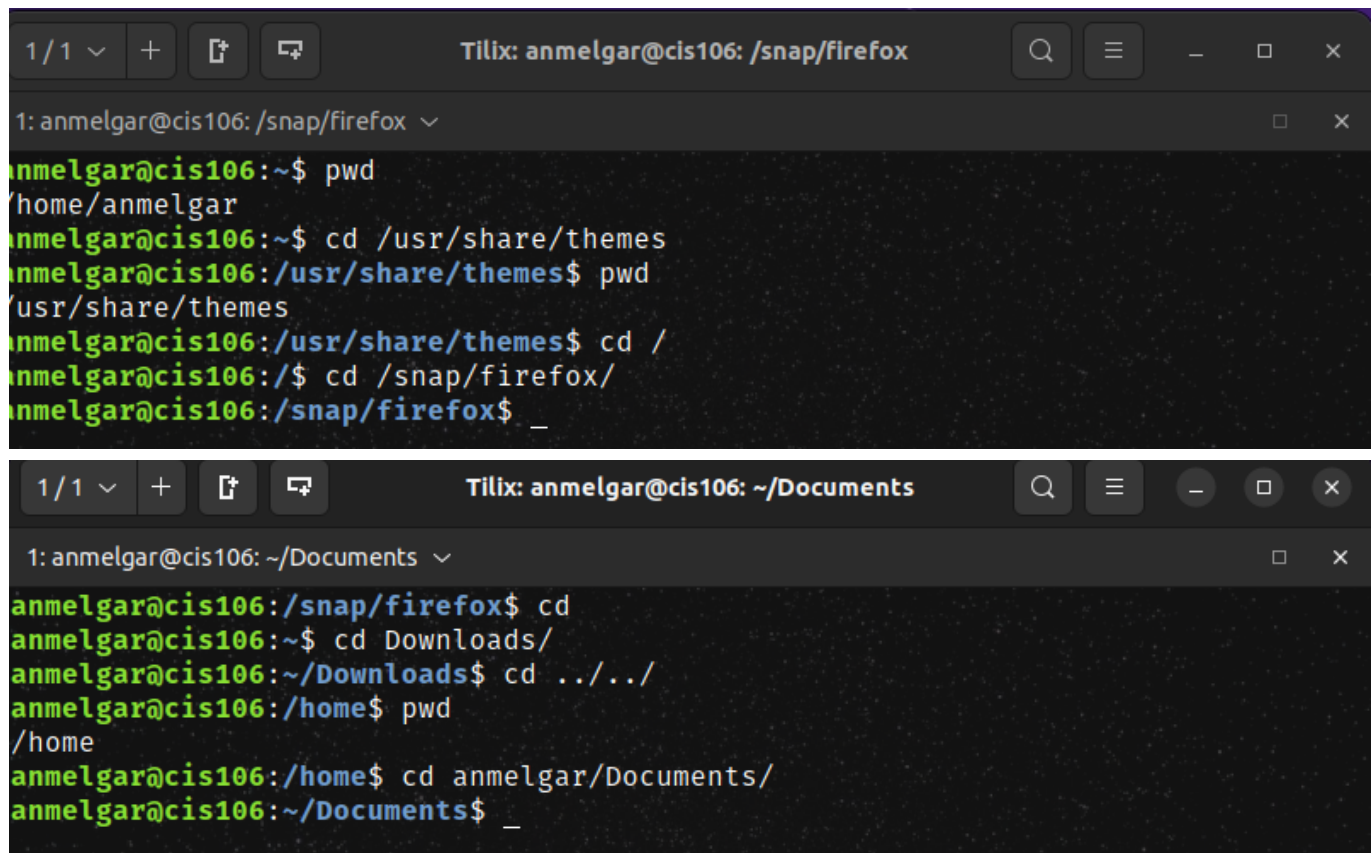


# Lab 4 The Linux FS

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## Question 1



The image shows two screenshots of a terminal window titled "Tilix: anmelgar@cis106: /snap/firefox". The first screenshot shows the user navigating from their home directory to /usr/share/themes and then to /snap/firefox. The second screenshot shows the user navigating from /snap/firefox to the home directory, then to Downloads, and finally to ~/Documents.

```
1: anmelgar@cis106: /snap/firefox
anmelgar@cis106:~$ pwd
/home/anmelgar
anmelgar@cis106:~$ cd /usr/share/themes
anmelgar@cis106:/usr/share/themes$ pwd
/usr/share/themes
anmelgar@cis106:/usr/share/themes$ cd /
anmelgar@cis106:/$ cd /snap/firefox/
anmelgar@cis106:/snap/firefox$ _
```

```
1: anmelgar@cis106: ~/Documents
anmelgar@cis106:/snap/firefox$ cd
anmelgar@cis106:~$ cd Downloads/
anmelgar@cis106:~/Downloads$ cd ../../
anmelgar@cis106:/home$ pwd
/home
anmelgar@cis106:/home$ cd anmelgar/Documents/
anmelgar@cis106:~/Documents$ _
```

## Question 2

```

1: anmelgar@cis106: ~/lab4files
anmelgar@cis106:~/Documents$ cd /usr/share/
anmelgar@cis106:/usr/share$ ls /home/anmelgar/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
anmelgar@cis106:/usr/share$ cd ~/lab4files/
anmelgar@cis106:~/lab4files$ ls -l
total 6580
-rw-rw-r-- 1 anmelgar anmelgar 20471 Feb 22 2022 countries.json
-rw-rw-r-- 1 anmelgar anmelgar 284042 Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 anmelgar anmelgar 764176 Feb 22 2022 document.docx
-rw-rw-r-- 1 anmelgar anmelgar 742478 Feb 22 2022 globe.avi
-rw-rw-r-- 1 anmelgar anmelgar 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 anmelgar anmelgar 2600138 Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 anmelgar anmelgar 8704 Feb 22 2022 sample.xls
-rw-rw-r-- 1 anmelgar anmelgar 42777 Feb 22 2022 Tux.png
-rw-rw-r-- 1 anmelgar anmelgar 2114053 Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 anmelgar anmelgar 137453 Feb 22 2022 website.html
anmelgar@cis106:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 anmelgar anmelgar 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 anmelgar anmelgar 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 anmelgar anmelgar 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 anmelgar anmelgar 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 anmelgar anmelgar 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 anmelgar anmelgar 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 anmelgar anmelgar 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 anmelgar anmelgar 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 anmelgar anmelgar 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 anmelgar anmelgar 135K Feb 22 2022 website.html
anmelgar@cis106:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 anmelgar anmelgar 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 anmelgar anmelgar 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 anmelgar anmelgar 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 anmelgar anmelgar 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 anmelgar anmelgar 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 anmelgar anmelgar 135K Feb 22 2022 website.html
-rw-rw-r-- 1 anmelgar anmelgar 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 anmelgar anmelgar 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 anmelgar anmelgar 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 anmelgar anmelgar 76 Feb 22 2022 helloWorld.c
anmelgar@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
anmelgar@cis106:~/lab4files$ ls -lhsGgi
total 6.5M
922385 -rw-rw-r-- 1 2.5M Feb 22 2022 Linux.pdf
922388 -rw-rw-r-- 1 2.1M Feb 22 2022 Ubuntu.pdf
922391 -rw-rw-r-- 1 747K Feb 22 2022 document.docx
922392 -rw-rw-r-- 1 726K Feb 22 2022 globe.avi
922390 -rw-rw-r-- 1 278K Feb 22 2022 csvfile.csv
922395 -rw-rw-r-- 1 135K Feb 22 2022 website.html
922387 -rw-rw-r-- 1 42K Feb 22 2022 Tux.png
922389 -rw-rw-r-- 1 20K Feb 22 2022 countries.json
922394 -rw-rw-r-- 1 8.5K Feb 22 2022 sample.xls
922393 -rw-rw-r-- 1 76 Feb 22 2022 helloWorld.c

```

```

anmelgar@cis106:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png     Linux.pdf   website.html   csvfile.csv    globe.avi
anmelgar@cis106:~/lab4files$ ls -Xr1
sample.xls
Tux.png
Ubuntu.pdf
Linux.pdf
countries.json
website.html
document.docx
csvfile.csv
helloWorld.c
globe.avi

```

## Question 4

```

anmelgar@cis106:~$ pwd
/home/anmelgar
anmelgar@cis106:~$ cd /
anmelgar@cis106:/$ cd /usr/share/icons/default
anmelgar@cis106:/usr/share/icons/default$ cd /
anmelgar@cis106:/$ cd /proc/sys/net/ipv4
anmelgar@cis106:/proc/sys/net/ipv4$ cd /
anmelgar@cis106:/$ cd /usr/share/backgrounds
anmelgar@cis106:/usr/share/backgrounds$ ls
Blue_flower_by_Elena_Stravoravdi.jpg      Jammy-Jellyfish_WP_4096x2304_Grey.png      ubuntu2_by_arman1992.jpg
canvas_by_roytanck.jpg                    jj_dark_by_Hiking93.jpg                    ubuntu_by_arman1992.jpg
Cherry_Tree_in_Lakones_by_elenastravoravdi.jpg  jj_light_by_Hiking93.jpg                    ubuntu-default-greyscale-wallpaper.png
contest                                    Mirror_by_Uday_Nakade.jpg                    warty-final-ubuntu.png
DSC2943_by_Kcpru.jpg                      Optical_Fibers_in_Dark_by_Elena_Stravoravdi.jpg
anmelgar@cis106:/usr/share/backgrounds$ cd ~
anmelgar@cis106:~$ cd /home/anmelgar/cis106
anmelgar@cis106:~/cis106$ ls
CheatSheet  Labs  WeekReports
anmelgar@cis106:~/cis106$ cd /home
anmelgar@cis106:/home$ cd anmelgar
anmelgar@cis106:~$ cd Downloads
anmelgar@cis106:~/Downloads$ ls
'lab4files(1).zip'  lab4files.zip  'Linux Workshop Ubuntu Software installation cheat sheet.png'

anmelgar@cis106:/dev/disk/by-id$ ls -a
.   ata-VBOX_CD-ROM_VB2-01700376   ata-VBOX_HARDDISK_VBf03724b3-e58cdafa-part1  ata-VBOX_HARDDISK_VBf03724b3-e58cdafa-part3
..  ata-VBOX_HARDDISK_VBf03724b3-e58cdafa  ata-VBOX_HARDDISK_VBf03724b3-e58cdafa-part2

anmelgar@cis106:/dev/disk/by-id$ cd /
anmelgar@cis106:/$ cd /usr/share/themes
anmelgar@cis106:/usr/share/themes$ ls -St
Yaru      Yaru-blue-dark  Yaru-hdpi      Yaru-olive-dark  Yaru-purple-dark  Yaru-sage-dark  Default  Adwaita-dark
Yaru-bark  Yaru-dark       Yaru-magenta   Yaru-prussiangreen  Yaru-red          Yaru-viridian   Emacs    HighContrast
Yaru-bark-dark  Yaru-dark-hdpi  Yaru-magenta-dark  Yaru-prussiangreen-dark  Yaru-red-dark    Yaru-viridian-dark  Raleigh
Yaru-blue      Yaru-dark-xdpi  Yaru-olive      Yaru-purple      Yaru-sage        Yaru-xdpi        Adwaita

```



```

anmelgar@cis106:/usr/share/themes$ cd ../
anmelgar@cis106:/usr/share$ ls -X
accountsservice      figlet
aclocal               file
acpi-support          file-roller
adduser               fish
aisleriot              flameshot
alacarte              flatpak
alsa                  fontconfig
alsa-base             fonts
alsa-card-profile     fonts-droid-fallback
appdata               fonts-font-awesome
app-info              fonts-sil-abyssinica
applications           fonts-sil-padauk
appport               foo2qpdf
apps                  foo2zjs
apturl                fwupd
ario                  gamemode
aspell                games
avahi                  gcc
backgrounds           GConf
base-files            gdb
base-passwd           gdm
bash-completion       geany
binfmts               geary
branding              gedit
brltty                GeoIP
bug                   gettext
build-essential       ghostscript
ca-certificates        git-core
caffeine-indicator     gitweb
catdoc                glade
cmake                  glvnd
code                   gnome
cogl                   gnome-applets
color                  gnome-background-properties
colord                 gnome-bluetooth
common-licenses        gnome-control-center
consolefonts           gnome-initial-setup
console-setup          gnome-logs
consoletrans           gnome-mahjongg
cowsay                 gnome-panel
cups                   gnome-remote-desktop
dbus-1                 gnome-session
dconf                  gnome-settings-daemon
debconf                gnome-shell
debhelper              gnome-software
debianutils            gnome-system-monitor
defaults               gnome-todo
desktop-directories    gnome-tweaks
dict                   gnome-video-effects
dictionaries-common    gnupg
distro-info             grilo-plugins
djvu                    groff
dns                     grub
dnsmasq-base           grub-gfxpayload-lists
doc                     gst-plugins-base
doc-base               gtk-doc
dpkg                   gtk-engines
emacs                  gtksourceview-4
emacs-common           guile
enchant-2              gupnp-av
eog                     gvfs
epiphany-browser       help
evince                  help-langpack
evolution-data-server  hplip
hunspell                hunsPELL
hwdata                  hwdm
hyphen                  i18n
ibus                    ibus-table
ibus-table              icons
ImageMagick-6           ImageMagick-6
im-config               im-config
indicator-application    indicator-application
indicator-power          indicator-power
indicators               indicators
info                    info
initramfs-tools          initramfs-tools
installed-tests          installed-tests
ipp-usb                  ipp-usb
iptables                iptables
iso-codes                iso-codes
java                     java
javascript               javascript
kconf_update             kconf_update
kde4                     kde4
keyrings                  keyrings
kf5                       kf5
knotifications5           knotifications5
kservices5                kservices5
kservicetypes5            kservicetypes5
language-selector         language-selector
language-support          language-support
language-tools            language-tools
libcaca                   libcaca
libc-bin                  libc-bin
libdebuginfod-common      libdebuginfod-common
libdrm                     libdrm
libexttextcat              libexttextcat
libgnomekbd                 libgnomekbd
libgweather                 libgweather
libweather-4                libweather-4
libinput                    libinput
liblangtag                  liblangtag
liblouis                    liblouis
liblouisutdm                liblouisutdm
libmysofa                   libmysofa
libreoffice                  libreoffice
librevenge                  librevenge
libthai                      libthai
libwacom                     libwacom
lightdm                      lightdm
lintian                       lintian
linux-sound-base             linux-sound-base
locale                       locale
locale-langpack              locale-langpack
locales                       locales
lto-disabled-list             lto-disabled-list
m2300w                       m2300w
man                           man
man-db                        man-db
mate-panel                    mate-panel
maven-repo                    maven-repo
media-player-info             media-player-info
menu                           menu
mesa-demos                    mesa-demos
metainfo                      metainfo
mfx                            mfx
mime                           mime
misc                          misc
mobile-broadband-provider-info mobile-broadband-provider-info
ModemManager                  ModemManager
mopidy                         mopidy
mousetweaks                   mousetweaks
mythes                        mythes
nano                           nano
nautilus                       nautilus
nautilus-python               nautilus-python
nautilus-share                 nautilus-share
nemo                           nemo
netpbm                         netpbm
netplan                       netplan
nodejs                         nodejs
numpy3                         numpy3
open-vm-tools                  open-vm-tools
openvpn                       openvpn
orca                           orca
os-prober                     os-prober
p11-kit                        p11-kit
package-data-downloads        package-data-downloads
PackageKit                    PackageKit
pam                            pam
pam-configs                    pam-configs
perl                           perl
perl5                          perl5
perl-openssl-defaults         perl-openssl-defaults
pipewire                       pipewire
pixmap                         pixmap
pkgconfig                     pkgconfig
plymouth                       plymouth
pnm2ppa                        pnm2ppa
pocketsphinx                  pocketsphinx
polkit-1                       polkit-1
poppler                       poppler
ppd                            ppd
ppp                            ppp
publicsuffix                  publicsuffix
pulseaudio                     pulseaudio
pyshared                       pyshared
python3                        python3
python-apt                     python-apt
qlogging-categories5           qlogging-categories5
qt5                             qt5
readline                       readline
remmina                        remmina
rhythmbox                      rhythmbox
rig                             rig
rsync                          rsync
rsyslog                        rsyslog
rubygems-integration           rubygems-integration
rygel                          rygel
samba                          samba
sass                           sass
seahorse                       seahorse
secureboot                     secureboot
sensible-utils                 sensible-utils
session-migration              session-migration
sgml                           sgml
sgml-base                      sgml-base
sgml-data                      sgml-data
snmp                           snmp
software-properties            software-properties
solid                           solid
sounds                         sounds
source-highlight               source-highlight
speech-dispatcher              speech-dispatcher
sphinx_rtd_theme               sphinx_rtd_theme
ssl-cert                       ssl-cert
system-config-printer          system-config-printer
systemd                        systemd
systemtap                      systemtap
tabset                         tabset
tcltk                          tcltk
terminfo                       terminfo
tex-common                     tex-common
texlive                        texlive
texmf                          texmf
themes                         themes
thumbnailers                   thumbnailers
tilix                           tilix
totem                           totem
tracker3                       tracker3
tracker3-miners                tracker3-miners
transmission                    transmission
ubuntu                          ubuntu
ubuntu-drivers-common          ubuntu-drivers-common
ubuntu-release-upgrader        ubuntu-release-upgrader
ubuntu-wayland                  ubuntu-wayland
ucf                             ucf
ufw                             ufw
unattended-upgrades            unattended-upgrades
unity                           unity
update-manager                 update-manager
update-notifier                 update-notifier
upstart                         upstart
usb-creator                     usb-creator
usb_modeswitch                 usb_modeswitch
vala                           vala
vim                             vim
vlc                             vlc
vulkan                         vulkan
w3m                             w3m
wayland-sessions                wayland-sessions
X11                              X11
xapps-common                    xapps-common
xdg-desktop-portal              xdg-desktop-portal
xml                             xml
xml-core                        xml-core
xsessions                       xsessions
yelp                            yelp
yelp-xsl                       yelp-xsl
zenity                          zenity
zoneinfo                       zoneinfo
zoneinfo-icu                    zoneinfo-icu
zsh                             zsh
gir-1.0                         gir-1.0
glib-2.0                        glib-2.0
gnome-bluetooth-3.0             gnome-bluetooth-3.0
goa-1.0                         goa-1.0
gststreamer-1.0                 gststreamer-1.0
gtk-4.0                         gtk-4.0
gtksourceview-2.0               gtksourceview-2.0
gtksourceview-3.0               gtksourceview-3.0
gupnp-dlna-2.0                  gupnp-dlna-2.0
org.gnome.Character             org.gnome.Character
dirc.d                          dirc.d

```

## Question 5

```
anmelgar@cis106:~$ cd /home/  
anmelgar@cis106:/home$ cd anmelgar  
anmelgar@cis106:~$ cd Downloads  
anmelgar@cis106:~/Downloads$ pwd  
/home/anmelgar/Downloads  
anmelgar@cis106:~/Downloads$ _
```

```
anmelgar@cis106:~$ cd /  
anmelgar@cis106:/$ /usr/share/themes/Adwaita  
bash: /usr/share/themes/Adwaita: Is a directory  
anmelgar@cis106:/$ cd /usr/share/themes/Adwaita  
anmelgar@cis106:/usr/share/themes/Adwaita$ cd /usr/  
anmelgar@cis106:/usr$ cd /home  
anmelgar@cis106:/home$ cd ~anmelgar/Documents  
anmelgar@cis106:~/Documents$ _
```