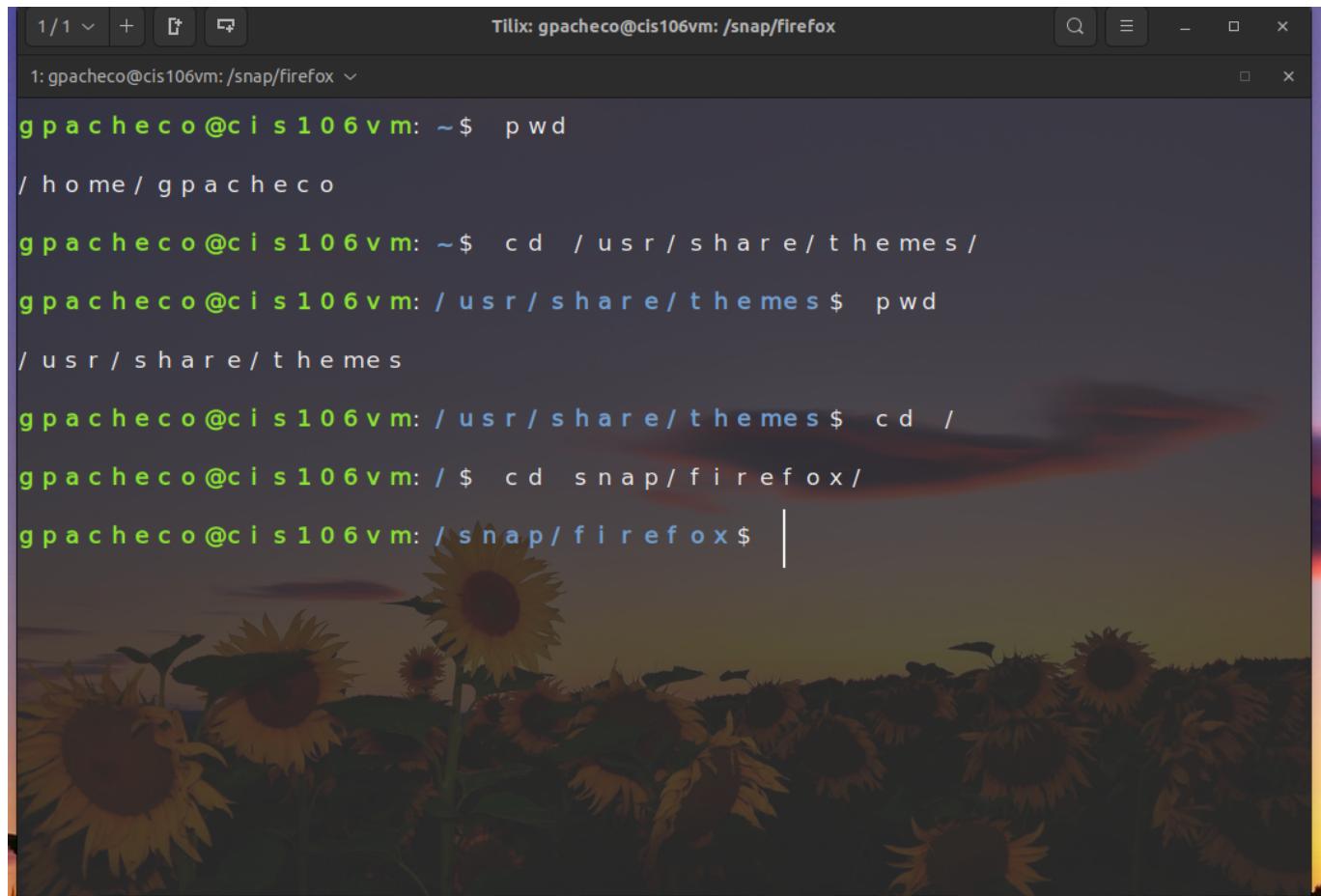


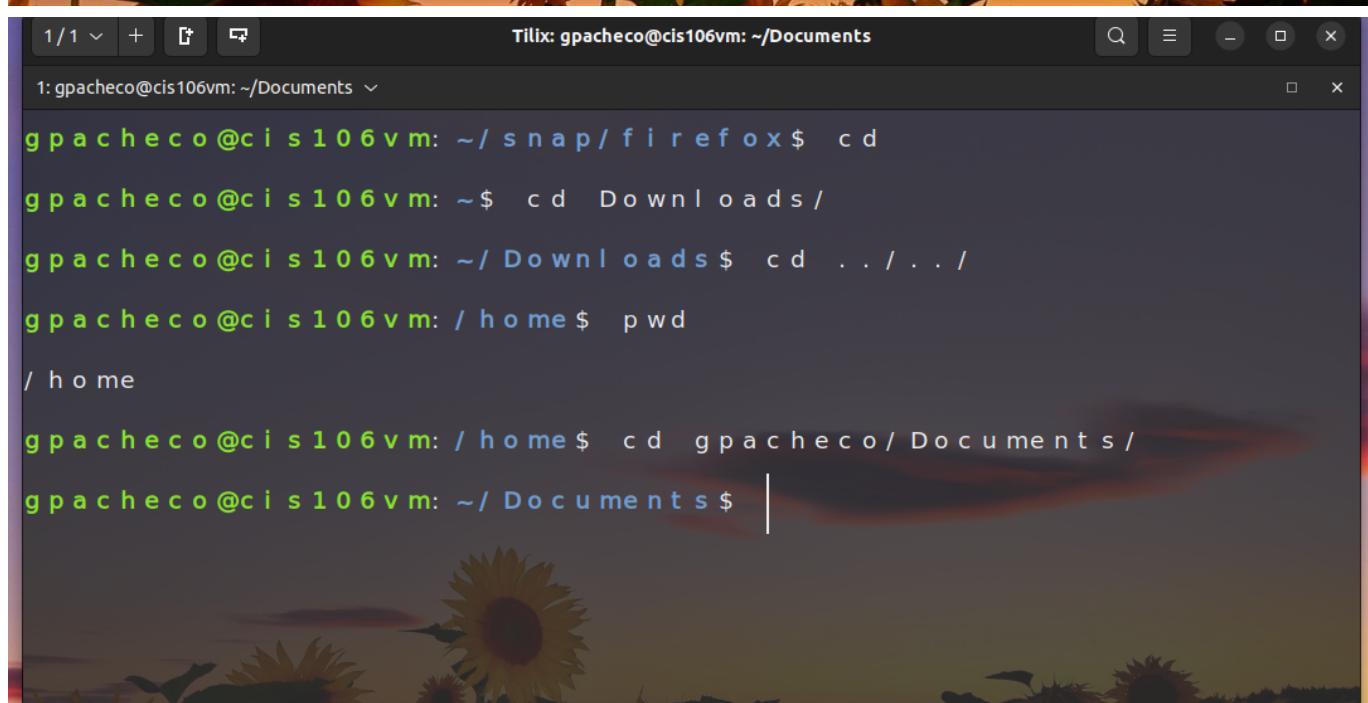
Lab 4 The Linux FS

Question 1

```
1/1 + 🔍 Tilix: gpacheco@cis106vm: /snap/firefox
1: gpacheco@cis106vm: /snap/firefox ~$ pwd
/ home / gpacheco
gpacheco@cis106vm: ~$ cd /usr/share/themes/
gpacheco@cis106vm: /usr/share/themes$ pwd
/ usr / share / themes
gpacheco@cis106vm: /usr/share/themes$ cd /
gpacheco@cis106vm: /$ cd snap/firefox/
gpacheco@cis106vm: /snap/firefox$ |
```



```
1/1 + 🔍 Tilix: gpacheco@cis106vm: ~/Documents
1: gpacheco@cis106vm: ~/Documents ~$ cd
gpacheco@cis106vm: ~$ cd Downloads/
gpacheco@cis106vm: ~/Downloads$ cd . . / . .
gpacheco@cis106vm: / home $ pwd
/ home
gpacheco@cis106vm: / home$ cd gpacheco/ Documents/
gpacheco@cis106vm: ~/Documents$ |
```

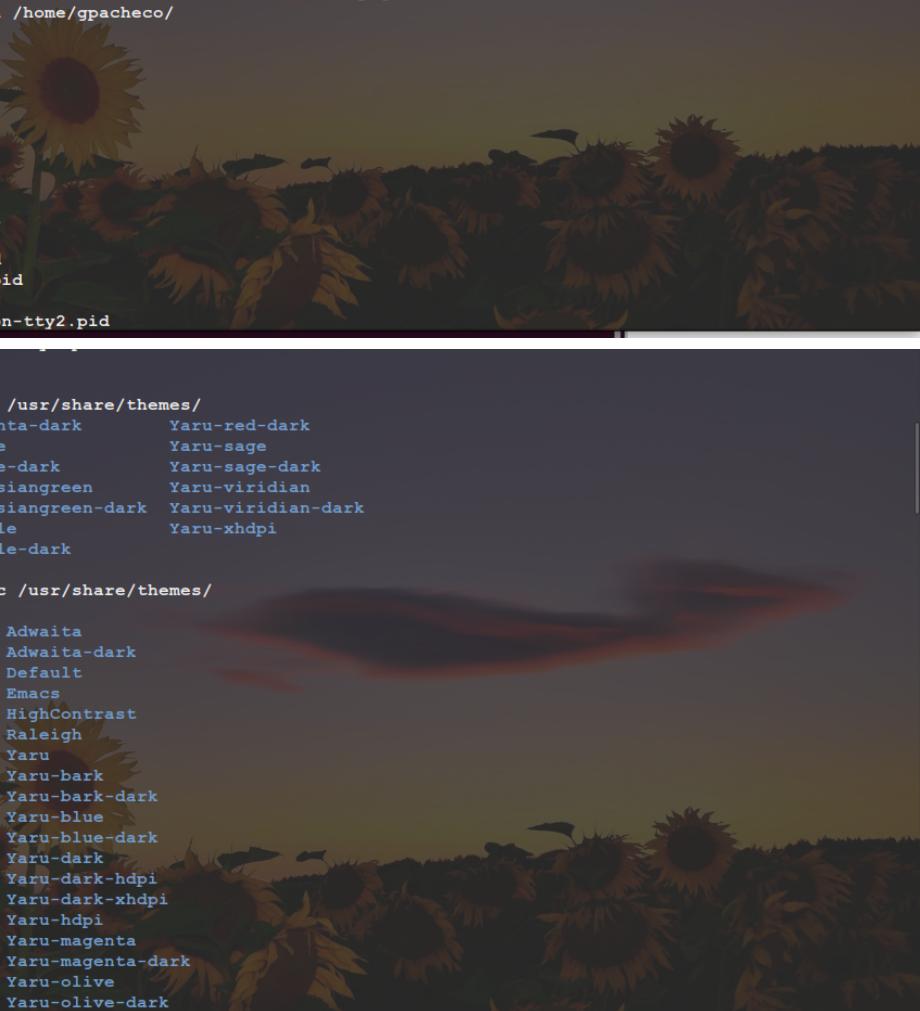


Question 2

```
1 / 1 + ⌂ ⌂ Tilix: gpacheco@cis106vm: ~/lab4files
gpacheco@cis106vm: ~/Documents$ cd /usr/share/
gpacheco@cis106vm: /usr/share$ ls /home/gpacheco/lab4files/
countries.json globe.avi sample.xls website.html
csvfile.csv helloWorld.c Tux.png
document.docx Linux.pdf Ubuntu.pdf
gpacheco@cis106vm: /usr/share$ cd ~/lab4files/
gpacheco@cis106vm: ~/lab4files$ ls -l
total 6580
-rw-rw-r-- 1 gpacheco gpacheco 20471 Feb 22 2022 countries.json
-rw-rw-r-- 1 gpacheco gpacheco 284042 Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 gpacheco gpacheco 764176 Feb 22 2022 document.docx
-rw-rw-r-- 1 gpacheco gpacheco 742478 Feb 22 2022 globe.avi
-rw-rw-r-- 1 gpacheco gpacheco 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 gpacheco gpacheco 2600138 Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 gpacheco gpacheco 8704 Feb 22 2022 sample.xls
-rw-rw-r-- 1 gpacheco gpacheco 42777 Feb 22 2022 Tux.png
-rw-rw-r-- 1 gpacheco gpacheco 2114053 Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 gpacheco gpacheco 137453 Feb 22 2022 website.html
gpacheco@cis106vm: ~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 gpacheco gpacheco 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 gpacheco gpacheco 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 gpacheco gpacheco 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 gpacheco gpacheco 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 gpacheco gpacheco 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 gpacheco gpacheco 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 gpacheco gpacheco 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 gpacheco gpacheco 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 gpacheco gpacheco 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 gpacheco gpacheco 135K Feb 22 2022 website.html
gpacheco@cis106vm: ~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 gpacheco gpacheco 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 gpacheco gpacheco 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 gpacheco gpacheco 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 gpacheco gpacheco 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 gpacheco gpacheco 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 gpacheco gpacheco 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 gpacheco gpacheco 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 gpacheco gpacheco 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 gpacheco gpacheco 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 gpacheco gpacheco 135K Feb 22 2022 website.html
gpacheco@cis106vm: ~/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
gpacheco@cis106vm: ~/lab4files$ ls -lhSgGi
total 6.5M
928689 -rw-rw-r-- 1 2.5M Feb 22 2022 Linux.pdf
928713 -rw-rw-r-- 1 2.1M Feb 22 2022 Ubuntu.pdf
928717 -rw-rw-r-- 1 747K Feb 22 2022 document.docx
928714 -rw-rw-r-- 1 726K Feb 22 2022 globe.avi
928716 -rw-rw-r-- 1 278K Feb 22 2022 csvfile.csv
928720 -rw-rw-r-- 1 135K Feb 22 2022 website.html
928712 -rw-rw-r-- 1 42K Feb 22 2022 Tux.png
928715 -rw-rw-r-- 1 20K Feb 22 2022 countries.json
928719 -rw-rw-r-- 1 8.5K Feb 22 2022 sample.xls
928718 -rw-rw-r-- 1 76 Feb 22 2022 helloWorld.c
gpacheco@cis106vm: ~/lab4files$ ls -Xr
sample.xls Ubuntu.pdf countries.json document.docx helloWorld.c
Tux.png Linux.pdf website.html csvfile.csv globe.avi
gpacheco@cis106vm: ~/lab4files$ |
```

Question 4

```
Tilix: gpacheoco@cis106vm: /dev/disk/by-id
```



```
1:gpacheoco@cis106vm:~/dev/disk/by-id ~
gpacheoco@cis106vm:~$ pwd
/home/gpacheoco
gpacheoco@cis106vm:~$ cd /usr/share/icons/default/
gpacheoco@cis106vm:/usr/share/icons/default$ cd /proc/sys/net/ipv4/
gpacheoco@cis106vm:/proc/sys/net/ipv4$ cd ../../..
gpacheoco@cis106vm:/proc/sys$ ls /usr/share/backgrounds/
Blue_flower_by_Elena_Stravoravdi.jpg jj_light_by_Hiking93.jpg
canvas_by_roytanck.jpg Mirror_by_Uday_Nakade.jpg
Cherry_Tree_in_Lakones_by_elenastravoravdi.jpg Optical_Fibers_in_Dark_by_Elena_Stravoravdi.jpg
contest ubuntu2_by_arman1992.jpg
DSC2943_by_kcpuru.jpg ubuntu_by_arman1992.jpg
Jammy-Jellyfish_WP_4096x2304_Grey.png ubuntu-default-greyscale-wallpaper.png
jj_dark_by_Hiking93.jpg warty-final-ubuntu.png
gpacheoco@cis106vm:/proc/sys$ ls ~/cis106/
cheatSheets Labs weekReports
gpacheoco@cis106vm:/proc/sys$ cd /home/
gpacheoco@cis106vm:/home$ ls ~/Downloads/
lab4files.zip 'Linux Workshop Ubuntu Software installation cheat sheet.png'
gpacheoco@cis106vm:/dev/disk/by-id$ ls -a /home/gpacheoco/
. lab4files
.. .local
.bash_history Music
.bash_logout Pictures
.bashrc .pki
.cache .profile
.cis106 Public
.cis106.png snap
.config .ssh
.covers .sudo_as_admin_successful
/Desktop Templates
/Documents .vboxclient-clipboard.pid
/.dotnet .vboxclient-draganddrop.pid
/Downloads .vboxclient-seamless.pid
/.font .vboxclient-vmsvga-session-tty2.pid

.gitconfig Videos
.gnupg .vscode
gpacheoco@cis106vm:/dev/disk/by-id$ ls -c /usr/share/themes/
Adwaita Yaru-bark-dark Yaru-magenta-dark Yaru-red-dark
Adwaita-dark Yaru-blue Yaru-olive Yaru-sage
Default Yaru-blue-dark Yaru-olive-dark Yaru-sage-dark
Emacs Yaru-dark Yaru-prussiangreen Yaru-viridian
HighContrast Yaru-dark-hdpi Yaru-prussiangreen-dark Yaru-viridian-dark
Raleigh Yaru-dark-xhdpi Yaru-purple Yaru-xhdpi
Yaru Yaru-hdpi Yaru-purple-dark
Yaru-bark Yaru-magenta Yaru-red
gpacheoco@cis106vm:/dev/disk/by-id$ ls -lc /usr/share/themes/
total 120
drwxr-xr-x 4 root root 4096 Feb  2 22:25 Adwaita
drwxr-xr-x 4 root root 4096 Feb  2 22:25 Adwaita-dark
drwxr-xr-x 4 root root 4096 Feb  2 22:25 Default
drwxr-xr-x 4 root root 4096 Feb  2 22:25 Emacs
drwxr-xr-x 4 root root 4096 Feb  2 22:25 HighContrast
drwxr-xr-x 3 root root 4096 Feb  2 22:25 Raleigh
drwxr-xr-x 7 root root 4096 Feb  2 22:25 Yaru
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-bark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-bark-dark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-blue
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-blue-dark
drwxr-xr-x 7 root root 4096 Feb  2 22:25 Yaru-dark
drwxr-xr-x 3 root root 4096 Feb  2 22:25 Yaru-dark-hdpi
drwxr-xr-x 3 root root 4096 Feb  2 22:25 Yaru-dark-xhdpi
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-magenta
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-magenta-dark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-olive
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-olive-dark
```

```
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-prussiangreen
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-prussiangreen-dark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-purple
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-purple-dark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-red
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-red-dark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-sage
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-sage-dark
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-viridian
drwxr-xr-x 5 root root 4096 Feb  2 22:25 Yaru-viridian-dark
drwxr-xr-x 3 root root 4096 Feb  2 22:25 Yaru-xhdpi
gpacheco@cis106vm:/dev/disk/by-id$ ls -X /usr/share/
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                      liblouisutdml
app-info                      libmysofa
applications                  libreoffice
apport                        librevenge
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
brltty                       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                          mime
color                         misc
colord                        mobile-broadband-provider-info
common-licenses                ModemManager
consolefonts                 mousetweaks
console-setup                  mythes
consoletrans                 nano
cowsay                        nautilus
cups                           nautilus-python
dbus-1                        nautilus-share
dconf                          nemo
debconf                       netpbm
debhelper                     netplan
debianutils                   numpy3
defaults                      open-vm-tools
desktop-directories            openvpn
dict                           orca
dictionaries-common            os-prober
distro-info                   p11-kit
djvu                          package-data-downloads
dns                           PackageKit
dnsmasq-base                  pam
doc                           pam-configs
doc-base                      perl
```

```
emacs  
emacsen-common  
enchant-2  
eog  
evince  
evolution-data-server  
figlet  
file  
file-roller  
fish  
flameshot  
flatpak  
fontconfig  
fonts  
fonts-droid-fallback  
fonts-sil-abyssinica  
fonts-sil-padauk  
foo2qpd  
foo2zjs  
fwupd  
gamemode  
games  
gcc  
GConf  
gdb  
gdm  
geany  
geary  
gedit  
GeoIP  
gettext  
ghostscript  
git-core  
gitweb
```

```
perl5  
perl-openssl-defaults  
pipewire  
pixmaps  
pkgconfig  
plymouth  
pnm2ppa  
pocketsphinx  
polkit-1  
poppler  
ppd  
PPP  
publicsuffix  
pulseaudio  
pyshared  
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
```

```
glade  
glvnd  
gnome  
gnome-applets  
gnome-background-properties  
gnome-bluetooth  
gnome-control-center  
gnome-initial-setup  
gnome-logs  
gnome-mahjongg  
gnome-panel  
gnome-remote-desktop  
gnome-session  
gnome-settings-daemon  
gnome-shell  
gnome-software  
gnome-system-monitor  
gnome-todo  
gnome-tweaks  
gnome-video-effects  
gnupg  
grilo-plugins  
groff  
grub  
grub-gfxpayload-lists  
gst-plugins-base  
gtk-doc  
gtk-engines  
gtksourceview-4  
guile  
gupnp-av  
gvfs  
help  
help-langpack
```

```
sgml-data  
snmp  
software-properties  
solid  
sounds  
source-highlight  
speech-dispatcher  
ssl-cert  
system-config-printer  
systemd  
systemtap  
tabset  
tcltk  
terminfo  
tex-common  
texlive  
texmf  
themes  
thumbnails  
tilix  
totem  
tracker3  
tracker3-miners  
transmission  
ubuntu  
ubuntu-drivers-common  
ubuntu-release-upgrader  
ubuntu-wayland  
ucf  
ufw  
unattended-upgrades  
unity  
update-manager  
update-notifier
```

```
- help-langpack           update-notifier
hplip                   upstart
hunspell                usb-creator
hwdata                  usb_modeswitch
hyphen                  vala
i18n                   vim
ibus                    vlc
ibus-table              vulkan
icons                   w3m
ImageMagick-6           wayland-sessions
im-config               X11
indicator-application   xapps-common
indicator-power         xdg-desktop-portal
indicators              xml
info                     xml-core
initramfs-tools          xsessions
installed-tests          yelp
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                     goa-1.0
knotifications5          gstreamer-1.0
kservices5               gtk-4.0
kservicetypes5          gtksourceview-2.0
language-selector        gtksourceview-3.0
language-support         gupnp-dina-2.0
language-tools           org.gnome.Characters
libcaca                 drirc.d
```

```
libc-bin
gpacheco@cis106vm:/dev/disk/by-id$ |
```

Question 5

```
gpacheco@cis106vm:~$ cd /
gpacheco@cis106vm:/$ cd home/
gpacheco@cis106vm:/home$ cd gpacheco/
gpacheco@cis106vm:~$ cd Downloads/
gpacheco@cis106vm:~/Downloads$ pwd
/home/gpacheco/Downloads
gpacheco@cis106vm:~/Downloads$ |
```

```
gpacheco@cis106vm:~/Downloads$ cd /usr/share/themes/Adwaita
gpacheco@cis106vm:/usr/share/themes/Adwaita$ cd /home/gpacheco/Documents/
gpacheco@cis106vm:~/Documents$ pwd
/home/gpacheco/Documents
gpacheco@cis106vm:~/Documents$ |
```