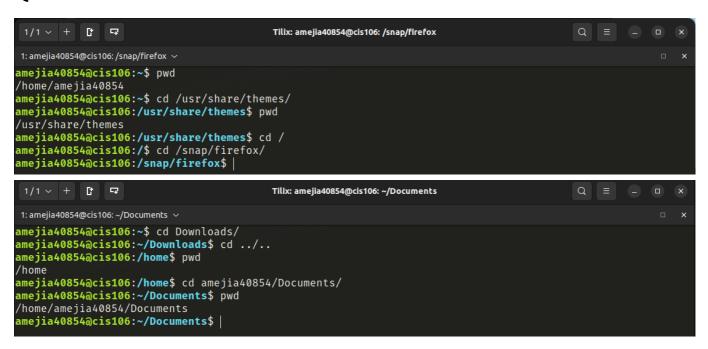
Lab 4 The Linux File System

Question 1



```
1/1 ~ +
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                                       Tilix: amejia40854@cis106: ~/lab4files
1: amejia40854@cis106: ~/lab4files ~
amejia40854@cis106:~$ cd /usr/share
amejia40854@cis106:/usr/share$ ls /home/amejia40854/lab4files/
countries.json document.docx helloWorld.c sample.xls Ubuntu.pdf
csvfile.csv
                globe.avi
                               Linux.pdf
                                             Tux.png
                                                         website.html
amejia40854@cis106:/usr/share$ cd ~/lab4files/; ls -lh
total 6.5M
-rw-rw-r-- 1 amejia40854 amejia40854 20K Feb 22
                                                  2022 countries.json
-rw-rw-r-- 1 amejia40854 amejia40854 278K Feb 22
                                                   2022 csvfile.csv
-rw-rw-r-- 1 amejia40854 amejia40854 747K Feb 22
                                                  2022 document.docx
-rw-rw-r-- 1 amejia40854 amejia40854 726K Feb 22
                                                  2022 globe.avi
                                                  2022 helloWorld.c
-rw-rw-r-- 1 amejia40854 amejia40854
                                      76 Feb 22
-rw-rw-r-- 1 amejia40854 amejia40854 2.5M Feb 22
                                                  2022 Linux.pdf
-rw-rw-r-- 1 amejia40854 amejia40854 8.5K Feb 22
                                                  2022 sample.xls
-rw-rw-r-- 1 amejia40854 amejia40854 42K Feb 22
                                                  2022 Tux.png
-rw-rw-r-- 1 amejia40854 amejia40854 2.1M Feb 22
                                                   2022 Ubuntu.pdf
-rw-rw-r-- 1 amejia40854 amejia40854 135K Feb 22
                                                   2022 website.html
amejia40854@cis106:~/lab4files$ ls -lhS
total 6.5M
-rw-rw-r-- 1 amejia40854 amejia40854 2.5M Feb 22
                                                   2022 Linux.pdf
-rw-rw-r-- 1 amejia40854 amejia40854 2.1M Feb 22
                                                   2022 Ubuntu.pdf
-rw-rw-r-- 1 amejia40854 amejia40854 747K Feb 22
                                                   2022 document.docx
-rw-rw-r-- 1 amejia40854 amejia40854 726K Feb 22
                                                  2022 globe.avi
-rw-rw-r-- 1 amejia40854 amejia40854 278K Feb 22
                                                   2022 csvfile.csv
-rw-rw-r-- 1 amejia40854 amejia40854 135K Feb 22
                                                   2022 website.html
-rw-rw-r-- 1 amejia40854 amejia40854 42K Feb 22
                                                   2022 Tux.png
-rw-rw-r-- 1 amejia40854 amejia40854 20K Feb 22
                                                  2022 countries.json
-rw-rw-r-- 1 amejia40854 amejia40854 8.5K Feb 22
                                                   2022 sample.xls
-rw-rw-r-- 1 amejia40854 amejia40854 76 Feb 22
                                                  2022 helloWorld.c
amejia40854@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
amejia40854@cis106:~/lab4files$ ls -lhSgGi
```

```
total 6.5M
2123108 -rw-rw-r-- 1 2.5M Feb 22
                                  2022 Linux.pdf
2123111 -rw-rw-r-- 1 2.1M Feb 22
                                  2022 Ubuntu.pdf
2123114 -rw-rw-r-- 1 747K Feb 22
                                 2022 document.docx
2123115 -rw-rw-r-- 1 726K Feb 22
                                  2022 globe.avi
2123113 -rw-rw-r-- 1 278K Feb 22
                                  2022 csvfile.csv
2123118 -rw-rw-r-- 1 135K Feb 22
                                  2022 website.html
2123110 -rw-rw-r-- 1 42K Feb 22
                                  2022 Tux.png
2123112 -rw-rw-r-- 1
                      20K Feb 22
                                  2022 countries.json
2123117 -rw-rw-r-- 1 8.5K Feb 22
                                  2022 sample.xls
2123116 -rw-rw-r-- 1 76 Feb 22
                                  2022 helloWorld.c
ameiia40854@cis106:~/lah4files$ ls -Xr
```

```
sample.xls countries.json helloWorld.c

Tux.png website.html globe.avi

Ubuntu.pdf document.docx

Linux.pdf csvfile.csv

amejia40854@cis106:~/lab4files$
```

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Tilix: amejia40854@cis106: ~/Downl
 1/1 ~ | + |
            D)
                다
 1: amejia40854@cis106: ~/Downloads ~
amejia40854@cis106:~$ cd /etc
amejia40854@cis106:/etc$ tree ~/cis106/labs/lab4
/home/amejia40854/cis106/labs/lab4
  — lab4.md
   - q1.1.png
  q1.2.png
  – q2.1.png
   - q2.2.png
0 directories, 5 files
amejia40854@cis106:/etc$ cd ~/Downloads/
amejia40854@cis106:~/Downloads$ tree -fph ~/cis106/labs/lab4
[drwxrwxr-x 4.0K] /home/amejia40854/cis106/labs/lab4
   [-rw-rw-r-- 270]
                         /home/amejia40854/cis106/labs/lab4/lab4.md
                 71K]
                         /home/amejia40854/cis106/labs/lab4/q1.1.png
   [-rw-rw-r--
   [-rw-rw-r-- 73K]
                         /home/amejia40854/cis106/labs/lab4/q1.2.png
    [-rw-rw-r-- 282K]
                         /home/amejia40854/cis106/labs/lab4/q2.1.png
    [-rw-rw-r-- 116K]
                         /home/amejia40854/cis106/labs/lab4/q2.2.png
0 directories, 5 files
amejia40854@cis106:~/Downloads$ tree -tg ~/cis106/labs/lab4
[amejia40854] /home/amejia40854/cis106/labs/lab4
  — [amejia40854]
                    q1.1.png
   [amejia40854]
                    q1.2.png
   [amejia40854]
                    q2.1.png
   [amejia40854]
                   q2.2.png
   [amejia40854] lab4.md
0 directories, 5 files
amejia40854@cis106:~/Downloads$ tree -tug ~/cis106/labs/lab4
[amejia40854 amejia40854] /home/amejia40854/cis106/labs/lab4
   - [amejia40854 amejia40854] q1.1.png
   - [amejia40854 amejia40854] q1.2.png
   - [amejia40854 amejia40854] q2.1.png
    [amejia40854 amejia40854] q2.2.png
   [amejia40854 amejia40854]
                                lab4.md
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                                         Tilix: amejia40854@cis106: ~/Downloads
1: amejia40854@cis106: ~/Downloads   ∨
0 directories, 5 files
amejia40854@cis106:~/Downloads$ exa --help
Command 'exa' not found, but can be installed with:
sudo apt install exa
amejia40854@cis106:~/Downloads$ exa --help
Usage:
 exa [options] [files...]
META OPTIONS
                 show list of command-line options
 -?, --help
 -v, --version
                 show version of exa
DISPLAY OPTIONS
 -1, --oneline
                 display one entry per line
```

```
-t, --tong
-G, --grid
-x, --across
                       display extended file metadata as a table
                       display entries as a grid (default)
                       sort the grid across, rather than downwards
  -R, --recurse
                       recurse into directories
  -T, --tree
-F, --classify
                       recurse into directories as a tree
                       display type indicator by file names
  --colo[u]r=WHEN
                       when to use terminal colours (always, auto, never)
  --colo[u]r-scale
                       highlight levels of file sizes distinctly
 --icons
                       display icons
  --no-icons
                       don't display icons (always overrides --icons)
FILTERING AND SORTING OPTIONS
                                show hidden and 'dot' files
list directories as files; don't list their contents
  -a, --all
-d, --list-dirs
  -L, --level DEPTH
                                limit the depth of recursion
  -r, --reverse
                                reverse the sort order
  -s, --sort SORT_FIELD
                                which field to sort by
  --group-directories-first list directories before other files
  -D, --only-dirs
                                list only directories
  -I, --ignore-glob GLOBS
                                glob patterns (pipe-separated) of files to ignore
  Valid sort fields:
                                name, Name, extension, Extension, size, type,
                                modified, accessed, created, inode, and none. date, time, old, and new all refer to modified.
```

```
1/1 ~ + []
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                                                      Tilix: amejia40854@cis106: ~/Downloads
1: amejia40854@cis106: ~/Downloads ~
                         list file sizes with binary prefixes
  -b, --binary
                         list file sizes in bytes, without any prefixes
  -B, --bytes
                         list each file's group
  -g, --group
  -h, --header
                         add a header row to each column
                         list each file's number of hard links
  -H, --links
                         list each file's inode number
  -i, --inode
                         use the modified timestamp field
  -m, --modified
                         list numeric user and group IDs
  -n, --numeric
  -S, --blocks
                         show number of file system blocks
  -t, --time FIELD
                       which timestamp field to list (modified, accessed, created)
  -u, --accessed
                         use the accessed timestamp field
  -U, --created
                         use the created timestamp field
  --changed
                         use the changed timestamp field
                         how to format timestamps (default, iso, long-iso, full-iso)
  --time-style
                         suppress the permissions field
  --no-permissions
 --octal-permissions list each file's permission in octal format
 --no-filesize
                         suppress the filesize field
 --no-user
                         suppress the user field
                         suppress the time field
  --no-time
  -᠗, --extended
                         list each file's extended attributes and sizes
amejia40854@cis106:~/Downloads$ exa -l ~/cis106/labs/lab4
.rw-rw-r-- 270 amejia40854 18 Oct 21:54 lab4.md
.rw-rw-r-- 73k amejia40854 18 Oct 21:34 q1.1.png
.rw-rw-r-- 75k amejia40854 18 Oct 21:36 q1.2.png
.rw-rw-r-- 289k amejia40854 18 Oct 21:51 q2.1.png
.rw-rw-r-- 119k amejia40854 18 Oct 21:52 q2.2.png
amejia40854@cis106:~/Downloads$ exa -lh ~/cis106/labs/lab4
<u>Permissions Size User</u>
                          <u>Date Modified Name</u>

      .rw-rw-r--
      270 amejia40854
      18 Oct 21:54 lab4.md

      .rw-rw-r--
      73k amejia40854
      18 Oct 21:34 q1.1.png

             75k amejia40854 18 Oct 21:36 q1.2.png
.rw-rw-r--
.rw-rw-r-- 289k amejia40854 18 Oct 21:51 q2.1.png
.rw-rw-r-- 119k amejia40854 18 Oct 21:52 q2.2.png
amejia40854@cis106:~/Downloads$ exa -lhU --no-user ~/cis106/labs/lab4
<u>Permissions Size Date Created Name</u>
.rw-rw-r-- 270 18 Oct 21:24 lab4.md
              73k 18 Oct 21:34 q1.1.png
. rw-rw-r--
             75k 18 Oct 21:36 q1.2.png
. rw-rw-r--
.rw-rw-r-- 289k 18 Oct 21:51 q2.1.png
.rw-rw-r-- 119k 18 Oct 21:52 q2.2.png
amejia40854@cis106:~/Downloads$
```

```
1/1 ~ | +
           [7]
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                                                            Tilix: amejia40854@cis106:
 1: amejia40854@cis106: /dev/disk/by-id \
amejia40854@cis106:~$ pwd
/home/amejia40854
amejia40854@cis106:~$ cd /usr/share/icons/default/
amejia40854@cis106:/usr/share/icons/default$ cd /proc/sys/net/ipv4
amejia40854@cis106:/proc/sys/net/ipv4$ cd -
/usr/share/icons/default
amejia40854@cis106:/usr/share/icons/default$ ls /usr/share/backgrounds/
Blue_flower_by_Elena_Stravoravdi.jpg
canvas_by_roytanck.jpg
Cherry_Tree_in_Lakones_by_elenastravoravdi.jpg
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
wartv-final-ubuntu.png
amejia40854@cis106:/usr/share/icons/default$ ls ~/cis106/
cheatSheets labs weekReports
amejia40854@cis106:/usr/share/icons/default$ cd /home
amejia40854@cis106:/home$ ls amejia40854/Downloads/
lab4files.zip
<mark>amejia40854@cis106:/home</mark>$ cd /dev/disk/by-id
                                              Tilix: amejia40854@cis106: /dev/disk/by-id
```

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 1: amejia40854@cis106: /dev/disk/by-id ~
<mark>amejia40854@cis106:/dev/disk/by-id</mark>$ ls -la ~
total 208
-rw-r--r-- 1 amejia40854 amejia40854 19471 Oct 18 22:03 ''$'\033'
drwxr-x--- 25 amejia40854 amejia40854 4096 Oct 18 22:35
drwxr-xr-x 3 root
                                                    4096 Sep 22 19:05 ...
                                   root
rw----- 1 amejia40854 amejia40854 9947 Oct 18 22:38 .bash_history-
drwx----- 25 amejia40854 amejia40854 4096 Oct
                                                                   9 17:30
                                                                                 .config
drwxr-xr-x 2 amejia40854 amejia40854 4096 Oct 5 17:58 Desktop
drwxr-xr-x 4 amejia40854 amejia40854 4096 Oct 18 18:58 Documents
drwxrwxr-x 3 amejia40854 amejia40854 4096 Sep 26 22:49
                                                                                 .dotnet
drwxrwxr-x 2 amejia40854 amejia40854 4096 Oct 18 21:39 Downloads
drwxrwxr-x 2 amejia40854 amejia40854 12288 Oct 9 00:30 .fonts
-rw-rw-r-- 1 amejia40854 amejia40854 97 Sep 26 23:48 gitcommands.txt
-rw-rw-r-- 1 amejia40854 amejia40854 89 Sep 26 23:37 .gitconfig sudo|
drwx----- 2 amejia40854 amejia40854 4096 Oct 9 00:10 .gnupg
drwxrwxr-x 2 amejia40854 amejia40854 4096 Feb 22 2022 lab4files
-rw----- 1 amejia40854 amejia40854 341 Oct 18 22:35 drwx----- 4 amejia40854 amejia40854 4096 Sep 26 23:53 drwx----- 7 amejia40854 amejia40854 4096 Oct 9 01:06 drwxr-xr-x 2 amejia40854 amejia40854 4096 Oct 18 18:58 -rw-r--r-- 1 amejia40854 amejia40854 19471 Oct 18 22:02 drwxr-xr-x 2 amejia40854 amejia40854 4096 Oct 9 00:33
                                                                                 .lesshst
                                                                                 .local
                                                                                 Mail
                                                                                 Music
                                                                                 permission
```

```
drwxrwxr-x 2 amejia40854 amejia40854
drwxrwxr-x 2 amejia40854 amejia40854
-rw-r--r-- 1 amejia40854 amejia40854
drwxr-xr-x 2 amejia40854 amejia40854
-rw----- 1 amejia40854 amejia40854
drwx----- 5 amejia40854 amejia40854
                                                                           .pki
                                                  4096 Sep 26 22:49
                                                  4096 Feb 27 2022
807 Sep 22 19:05
                                                                           practicels
                                                                           .profile
                                                  4096 Sep 22 19:09
                                                                           Public
                                                   90 Sep 27 18:20
                                                                          .python_history
                                                  4096 Sep 26 22:43 snap
drwx----- 2 amejia40854 amejia40854
                                                  4096 Sep 26 23:15 .ssh
-rw-r--r-- 1 amejia40854 amejia40854
                                                    0 Sep 26 22:32 .sudo_as_admin_successful
drwxr-xr-x 2 amejia40854 amejia40854
                                                  4096 Sep 22 19:09 Templates
-rw-r---- 1 amejia40854 amejia40854
                                                    5 Oct 18 17:59 .vboxclient-clipboard.pid
 -rw-r---- 1 amejia40854 amejia40854
                                                      5 Oct 18 17:59
                                                                           .vboxclient-draganddrop.pid
-rw-r---- 1 amejia40854 amejia40854
-rw-r---- 1 amejia40854 amejia40854
                                                      5 Oct 18 17:59
                                                                           .vboxclient-seamless.pid
                                                      6 Oct 18 17:59
                                                                           .vboxclient-vmsvga-session-tty2.pid
drwxr-xr-x 2 amejia40854 amejia40854 4096 Sep 22 19:09
                                                                           Videos
```

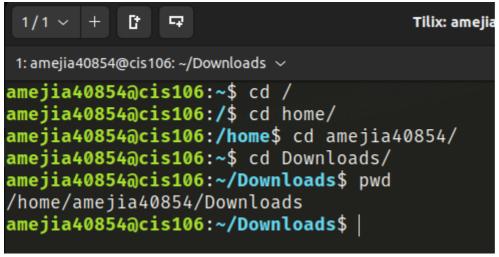
1/1 × + []		Tilix: amejia40854@cis106			
	1: amejia40854@cis106: /dev/disk/by-id				
amejia40854@cis1 Yaru Yaru-bark Yaru-bark-dark Yaru-blue Yaru-dark Yaru-dark Yaru-dark-hdpi Yaru-dark-xhdpi Yaru-hdpi Yaru-magenta	06:/dev/disk/by-id\$ ls -t Yaru-magenta-dark Yaru-olive Yaru-olive-dark Yaru-prussiangreen Yaru-prussiangreen-dark Yaru-purple Yaru-purple-dark Yaru-red Yaru-red-dark Yaru-sage 06:/dev/disk/by-id\$ ls -X libdebuginfo libdrm libexttextca libgnomekbd libgweather libinput liblangtag liblouis	/usr/share/themes/ Yaru-sage-dark Yaru-viridian Yaru-viridian-dark Yaru-xhdpi Default Emacs Raleigh Adwaita Adwaita-dark HighContrast /usr/share/ od-common			
applications apport apps apturl aspell avahi backgrounds base-files base-passwd bash-completion binfmts branding brltty bug build-essential ca-certificates caffeine-indicate	librevenge libthai libwacom lightdm lintian linux-sound- locale locale-langp locales lollypop lto-disabled m2300w man man-db mate-panel maven-repo	ack -list			

1/1 ~ + [] []	Tilix: amejia408
1: amejia40854@cis106: /dev/disk/by-id ~	
cmake	mesa-demos
code	metainfo
cogl	mfx
color	mime
colord	misc
common-licenses	mobile-broadband-provider-info
consolefonts	ModemManager
console-setup	mousetweaks
consoletrans	mythes
contractor	nano
cowsay	nautilus
cups	nautilus-python
dbus-1	nautilus-share
dconf	nemo
debconf	netpbm
debhelper	netplan
debianutils	numpy3
deepin	openal
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
dpkg	perl5
emacs	perl-openssl-defaults
emacsen-common	pipewire
enchant-2	pixmaps
eog evince	pkgconfig
evolution-data-server	plasma plymouth
falkon	pnm2ppa
ffmpeg	pocketsphinx
figlet	polkit-1
file	poppler
file-roller	ppd
fish	ppp
flameshot	publicsuffix

1/1 × + [-		Tilix: amejia408
1: amejia40854@cis106: /dev/disk/by-id		
flatpak	pulseaudio	
fontconfig	purpose	
fonts	pyshared	
fonts-droid-fallback	python3	
fonts-sil-abyssinica	python-apt	
fonts-sil-padauk	qlogging-categories5	
foo2qpdl	qt5	
foo2zjs	readline	
fwupd	remmina	
gamemode	rhythmbox	
games	rig	
gcc	rsync	
GConf	rsyslog	
gdb	rubygems-integration	
gdm	rygel	
geany	samba	
gedit	seahorse	
GeoIP	secureboot	
gettext	sensible-utils	
ghostscript	session-migration	
git-core	sgml	
gitweb	sgml-base	
glade	sgml-data	
glvnd	snmp	
gnome	software-properties solid	
gnome-applets gnome-background-properties	sounds	
gnome-bluetooth	source-highlight	
gnome-control-center	speech-dispatcher	
gnome-initial-setup	ssl-cert	
gnome-logs	system-config-printer	
gnome-mahjongg	systemd	
gnome-panel	systemtap	
gnome-remote-desktop	=tabset	
gnome-session	tcltk	
gnome-settings-daemon	terminfo	
gnome-shell	tex-common	
gnome-software	texlive	
gnome-system-monitor	texmf	
gnome-todo	themes	
gnome-tweaks	thumbnailers	
gnome-video-effects	Thunar	

1/1 > + []	Tilix: an		
1: amejia40854@cis106: /dev/disk/by-id			
gnupg	tilix		
grilo-plugins	totem		
groff	tracker3		
grub	tracker3-miners		
grub-gfxpayload-lists	transmission		
gst-plugins-base	ubuntu		
gtk-doc	ubuntu-drivers-common		
gtk-engines	ubuntu-release-upgrader		
gtksourceview-4	ubuntu-wayland		
gupnp-av	ucf		
gvfs	ufw		
help	unattended-upgrades 		
help-langpack	unity		
hplip	update-manager		
hunspell	update-notifier		
hwdata	upstart		
hyphen	usb-creator		
i18n	usb_modeswitch		
ibus	vala		
ibus-table	vim		
icons	vlc		
ImageMagick-6	vulkan		
im-config	w3m		
indicator-application	wayland-sessions		
indicator-power	X11		
indicators info	xapps-common		
initramfs-tools	xdg-desktop-portal xml		
installed-tests	xml-core		
ipp-usb	xmt-core xsessions		
iptables	yelp		
iso-codes	yelp-xsl		
java	zenity		
javascript	zoneinfo		
kconf_update	zoneinfo-icu		
kde4	zsh		
kdeconnect	gir-1.0		
keyrings	glib-2.0		
kf5	gnome-bluetooth-3.0		
knotifications5	goa-1.0		
kpackage	gstreamer-1.0		
krunner	gtk-4.0		
Kruiller	5th 4.0		

```
kservices5 gtksourceview-2.0
kservicetypes5 gtksourceview-3.0
language-selector gupnp-dlna-2.0
language-support org.gnome.Characters
language-tools drirc.d
libcaca config.kcfg
libc-bin
amejia40854@cis106:/dev/disk/by-id$
```



```
Tilix: amejia40854@cis106: ~/Documents

1: amejia40854@cis106: ~/Downloads$ cd /usr/share/themes/Adwaita

amejia40854@cis106: ~/Downloads$ cd /usr/share/themes/Adwaita

amejia40854@cis106: ~/Documents$ pwd

/home/amejia40854/Documents

amejia40854@cis106: ~/Documents$

amejia40854@cis106: ~/Documents$
```