

# Lab 4 Submission

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## Question 1

```
maperez14692@CIS106VM: /snap/firefox
maperez14692@CIS106VM:~$ pwd
/home/maperez14692
maperez14692@CIS106VM:~$ cd /usr/share/themes/
maperez14692@CIS106VM:/usr/share/themes$ pwd
/usr/share/themes
maperez14692@CIS106VM:/usr/share/themes$ cd /
maperez14692@CIS106VM:/ $ cd /snap/firefox/
maperez14692@CIS106VM:/snap/firefox$
```

```
maperez14692@CIS106VM: ~/Documents
maperez14692@CIS106VM:/snap/firefox$ cd
maperez14692@CIS106VM:~$ cd Downloads/
maperez14692@CIS106VM:~/Downloads$ cd ../../
maperez14692@CIS106VM:/home$ pwd
/home
maperez14692@CIS106VM:/home$ ls
maperez14692
maperez14692@CIS106VM:/home$ cd maperez14692/
.cache/      Documents/  lab4files/  Music/      Public/     Templates/  .vscode/
.config/     Downloads/ .local/     Pictures/   snap/       .thunderbird/
Desktop/     .gnupg/    .mozilla/   .pki/      .ssh/      Videos/
maperez14692@CIS106VM:/home$ cd maperez14692/Documents/
maperez14692@CIS106VM:~/Documents$ pwd
/home/maperez14692/Documents
maperez14692@CIS106VM:~/Documents$
```

## Question 2

```

maperez14692@CIS106VM: ~/lab4files
maperez14692@CIS106VM:~/Documents$ cd /usr/share/
maperez14692@CIS106VM:/usr/share$ ls /home/maperez14692/lab4files/
countries.json  document.docx  helloWorld.c  sample.xls  Ubuntu.pdf
csvfile.csv    globe.avi      Linux.pdf     Tux.png     website.html
maperez14692@CIS106VM:/usr/share$ cd /home/maperez14692/lab4files/
maperez14692@CIS106VM:~/lab4files$ ls -lh
total 6.5M
-rw-rw-r-- 1 maperez14692 maperez14692 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 maperez14692 maperez14692 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 maperez14692 maperez14692 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 maperez14692 maperez14692 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 maperez14692 maperez14692 76 Feb 22 2022 helloWorld.c
-rw-rw-r-- 1 maperez14692 maperez14692 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 maperez14692 maperez14692 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 maperez14692 maperez14692 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 maperez14692 maperez14692 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 maperez14692 maperez14692 135K Feb 22 2022 website.html
maperez14692@CIS106VM:~/lab4files$ ls -lhs
total 6.5M
-rw-rw-r-- 1 maperez14692 maperez14692 2.5M Feb 22 2022 Linux.pdf
-rw-rw-r-- 1 maperez14692 maperez14692 2.1M Feb 22 2022 Ubuntu.pdf
-rw-rw-r-- 1 maperez14692 maperez14692 747K Feb 22 2022 document.docx
-rw-rw-r-- 1 maperez14692 maperez14692 726K Feb 22 2022 globe.avi
-rw-rw-r-- 1 maperez14692 maperez14692 278K Feb 22 2022 csvfile.csv
-rw-rw-r-- 1 maperez14692 maperez14692 135K Feb 22 2022 website.html
-rw-rw-r-- 1 maperez14692 maperez14692 42K Feb 22 2022 Tux.png
-rw-rw-r-- 1 maperez14692 maperez14692 20K Feb 22 2022 countries.json
-rw-rw-r-- 1 maperez14692 maperez14692 8.5K Feb 22 2022 sample.xls
-rw-rw-r-- 1 maperez14692 maperez14692 76 Feb 22 2022 helloWorld.c
maperez14692@CIS106VM:~/lab4files$ ls -lhSgGi
total 6.5M
1050300 -rw-rw-r-- 1 2.5M Feb 22 2022 Linux.pdf
1050308 -rw-rw-r-- 1 2.1M Feb 22 2022 Ubuntu.pdf
1050311 -rw-rw-r-- 1 747K Feb 22 2022 document.docx
1050312 -rw-rw-r-- 1 726K Feb 22 2022 globe.avi
1050310 -rw-rw-r-- 1 278K Feb 22 2022 csvfile.csv
1050315 -rw-rw-r-- 1 135K Feb 22 2022 website.html
1050307 -rw-rw-r-- 1 42K Feb 22 2022 Tux.png
1050309 -rw-rw-r-- 1 20K Feb 22 2022 countries.json
1050314 -rw-rw-r-- 1 8.5K Feb 22 2022 sample.xls
1050313 -rw-rw-r-- 1 76 Feb 22 2022 helloWorld.c
maperez14692@CIS106VM:~/lab4files$ ls -Xr
sample.xls  Ubuntu.pdf  countries.json  document.docx  helloWorld.c
Tux.png     Linux.pdf   website.html    csvfile.csv    globe.avi
maperez14692@CIS106VM:~/lab4files$

```

## Question 3



```

maperez14692@CIS106VM: ~/Downloads
maperez14692@CIS106VM:~/Downloads$ cd /etc/
maperez14692@CIS106VM:/etc$ tree ~/lab4files/
/home/maperez14692/lab4files/
├── countries.json
├── csvfile.csv
├── document.docx
├── globe.avi
├── helloWorld.c
├── Linux.pdf
├── sample.xls
├── Tux.png
├── Ubuntu.pdf
└── website.html

0 directories, 10 files
maperez14692@CIS106VM:/etc$ cd ~/Downloads/
maperez14692@CIS106VM:~/Downloads$ tree -fph ../lab4files/
[drwxrwxr-x 4.0K] ../lab4files
├── [-rw-rw-r-- 20K] ../lab4files/countries.json
├── [-rw-rw-r-- 277K] ../lab4files/csvfile.csv
├── [-rw-rw-r-- 746K] ../lab4files/document.docx
├── [-rw-rw-r-- 725K] ../lab4files/globe.avi
├── [-rw-rw-r-- 76] ../lab4files/helloWorld.c
├── [-rw-rw-r-- 2.5M] ../lab4files/Linux.pdf
├── [-rw-rw-r-- 8.5K] ../lab4files/sample.xls
├── [-rw-rw-r-- 42K] ../lab4files/Tux.png
├── [-rw-rw-r-- 2.0M] ../lab4files/Ubuntu.pdf
└── [-rw-rw-r-- 134K] ../lab4files/website.html

0 directories, 10 files
maperez14692@CIS106VM:~/Downloads$ tree -tug ../lab4files/
[maperez14692 maperez14692] ../lab4files/
├── [maperez14692 maperez14692] Linux.pdf
├── [maperez14692 maperez14692] Tux.png
├── [maperez14692 maperez14692] Ubuntu.pdf
├── [maperez14692 maperez14692] sample.xls
├── [maperez14692 maperez14692] globe.avi
├── [maperez14692 maperez14692] document.docx
├── [maperez14692 maperez14692] csvfile.csv
├── [maperez14692 maperez14692] countries.json
├── [maperez14692 maperez14692] website.html
└── [maperez14692 maperez14692] helloWorld.c

0 directories, 10 files
maperez14692@CIS106VM:~/Downloads$ 

```

```

maperez14692@CIS106VM: ~/Downloads
maperez14692@CIS106VM:~/Downloads$ exa --help
Usage:
  exa [options] [files...]

META OPTIONS
  -?, --help          show list of command-line options
  -v, --version       show version of exa

DISPLAY OPTIONS
  -1, --oneline       display one entry per line
  -l, --long          display extended file metadata as a table
  -G, --grid          display entries as a grid (default)
  -x, --across        sort the grid across, rather than downwards
  -R, --recurse       recurse into directories
  -T, --tree          recurse into directories as a tree
  -F, --classify      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

```

```

-a, --all                show hidden and 'dot' files
-d, --list-dirs          list directories as files; don't list their contents
-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
--git-ignore             ignore files mentioned in '.gitignore'
Valid sort fields:       name, Name, extension, Extension, size, type,
                        modified, accessed, created, inode, and none.
                        date, time, old, and new all refer to modified.

```

#### LONG VIEW OPTIONS

```

-b, --binary            list file sizes with binary prefixes
-B, --bytes            list file sizes in bytes, without any prefixes
-g, --group            list each file's group
-h, --header            add a header row to each column
-H, --links            list each file's number of hard links
-i, --inode            list each file's inode number
-m, --modified         use the modified timestamp field
-n, --numeric          list numeric user and group IDs
-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

```

```

maperez14692@CIS106VM: ~/Downloads
maperez14692@CIS106VM: ~/Downloads
maperez14692@CIS106VM: ~/Downloads$ exa ~/lab4files/ -l
.rw-rw-r-- 20k maperez14692 22 Feb 14:16 countries.json
.rw-rw-r-- 284k maperez14692 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k maperez14692 22 Feb 14:13 document.docx
.rw-rw-r-- 742k maperez14692 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 maperez14692 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M maperez14692 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k maperez14692 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k maperez14692 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M maperez14692 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k maperez14692 22 Feb 14:16 website.html
maperez14692@CIS106VM:~/Downloads$ exa ~/lab4files/ -lh
Permissions Size User      Date Modified Name
.rw-rw-r-- 20k maperez14692 22 Feb 14:16 countries.json
.rw-rw-r-- 284k maperez14692 22 Feb 14:15 csvfile.csv
.rw-rw-r-- 764k maperez14692 22 Feb 14:13 document.docx
.rw-rw-r-- 742k maperez14692 22 Feb 14:12 globe.avi
.rw-rw-r-- 76 maperez14692 22 Feb 14:18 helloWorld.c
.rw-rw-r-- 2.6M maperez14692 22 Feb 14:10 Linux.pdf
.rw-rw-r-- 8.7k maperez14692 22 Feb 14:12 sample.xls
.rw-rw-r-- 43k maperez14692 22 Feb 14:10 Tux.png
.rw-rw-r-- 2.1M maperez14692 22 Feb 14:11 Ubuntu.pdf
.rw-rw-r-- 137k maperez14692 22 Feb 14:16 website.html
maperez14692@CIS106VM:~/Downloads$ exa ~/lab4files/ -lh --nouser -U
exa: Unknown argument --nouser
maperez14692@CIS106VM:~/Downloads$ exa ~/lab4files/ -lh --no-user -U
Permissions Size Date Created Name
.rw-rw-r-- 20k 15 Oct 14:18 countries.json
.rw-rw-r-- 284k 15 Oct 14:18 csvfile.csv
.rw-rw-r-- 764k 15 Oct 14:18 document.docx
.rw-rw-r-- 742k 15 Oct 14:18 globe.avi
.rw-rw-r-- 76 15 Oct 14:18 helloWorld.c
.rw-rw-r-- 2.6M 15 Oct 14:18 Linux.pdf
.rw-rw-r-- 8.7k 15 Oct 14:18 sample.xls
.rw-rw-r-- 43k 15 Oct 14:18 Tux.png
.rw-rw-r-- 2.1M 15 Oct 14:18 Ubuntu.pdf
.rw-rw-r-- 137k 15 Oct 14:18 website.html
maperez14692@CIS106VM:~/Downloads$

```

## Question 4

```
maperez14692@CIS106VM: /dev/disk/by-id
```

```
maperez14692@CIS106VM: /dev/disk/by-id x maperez14692@CIS106VM: ~/lab4files
```

```
maperez14692@CIS106VM:~/Downloads$ pwd
/home/maperez14692/Downloads
maperez14692@CIS106VM:~/Downloads$ cd /usr/share/icons/default/
maperez14692@CIS106VM:/usr/share/icons/default$ cd /proc/sys/net/ipv4
maperez14692@CIS106VM:/proc/sys/net/ipv4$ cd -
/usr/share/icons/default
maperez14692@CIS106VM:/usr/share/icons/default$ 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_kcpru.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
maperez14692@CIS106VM:/usr/share/icons/default$ ls ~/Documents/CIS-106-Fall-22/
CheatSheet 'Final Project' Homework Labs Survey Surveys 'Weekly Reports'
maperez14692@CIS106VM:/usr/share/icons/default$ cd /home/
maperez14692@CIS106VM:/home$ ls maperez14692/Downloads/
cis106.png      Lobster_Two      markdown_files  MyWallpapers      wallpaper.jpg
lab4files.zip  Lobster_Two.zip  mygame.lst      tia16e_ch02_ppt.pptx
```

```
maperez14692@CIS106VM:/home$ cd /dev/disk/by-id/
maperez14692@CIS106VM:/dev/disk/by-id$ ls /home/maperez14692/ -la
total 128
drwxr-x--- 21 maperez14692 maperez14692 4096 Oct 15 16:14 .
drwxr-xr-x  3 root         root         4096 Sep 19 20:41 ..
-rw-r----- 1 maperez14692 maperez14692 7068 Oct 15 15:44 .bash_history
-rw-r----- 1 maperez14692 maperez14692  220 Sep 19 20:41 .bash_logout
-rw-r----- 1 maperez14692 maperez14692 3771 Sep 19 20:41 .bashrc
drwx----- 20 maperez14692 maperez14692 4096 Oct  2 14:38 .cache
drwx----- 21 maperez14692 maperez14692 4096 Oct 15 16:25 .config
drwxr-xr-x  2 maperez14692 maperez14692 4096 Oct  2 18:03 Desktop
drwxr-xr-x  3 maperez14692 maperez14692 4096 Oct 15 15:40 Documents
drwxr-xr-x  5 maperez14692 maperez14692 4096 Oct 15 14:19 Downloads
-rw-rw-r--  1 maperez14692 maperez14692   66 Sep 21 18:06 .gitconfig
drwx----- 2 maperez14692 maperez14692 4096 Oct 15 15:43 .gnupg
drwxrwxr-x  2 maperez14692 maperez14692 4096 Oct 15 15:14 lab4files
-rw-r----- 1 maperez14692 maperez14692   20 Oct 15 16:14 .lessshst
drwx----- 4 maperez14692 maperez14692 4096 Sep 21 21:56 .local
drwx----- 3 maperez14692 maperez14692 4096 Sep 21 13:52 .mozilla
drwxr-xr-x  2 maperez14692 maperez14692 4096 Sep 19 20:52 Music
drwxr-xr-x  2 maperez14692 maperez14692 4096 Oct 15 15:40 Pictures
drwx----- 3 maperez14692 maperez14692 4096 Sep 21 14:03 .pki
-rw-r----- 1 maperez14692 maperez14692  807 Sep 19 20:41 .profile
drwxr-xr-x  2 maperez14692 maperez14692 4096 Sep 19 20:52 Public
drwx----- 6 maperez14692 maperez14692 4096 Sep 21 14:03 snap
drwx----- 2 maperez14692 maperez14692 4096 Sep 21 18:09 .ssh
-rw-r----- 1 maperez14692 maperez14692    0 Sep 19 21:47 .sudo_as_admin_successful
drwxr-xr-x  2 maperez14692 maperez14692 4096 Sep 19 20:52 Templates
drwx----- 6 maperez14692 maperez14692 4096 Sep 21 13:52 .thunderbird
```



```

maperez14692@CIS106VM: /dev/disk/by-id
maperez14692@CIS106VM: /dev/disk/by-id x maperez14692@CIS106VM: ~/lab4files x
drwx----- 6 maperez14692 maperez14692 4096 Sep 21 13:52 .thunderbird
-rw-r----- 1 maperez14692 maperez14692 5 Oct 15 15:48 .vboxclient-clipboard.pid
-rw-r----- 1 maperez14692 maperez14692 5 Oct 15 15:48 .vboxclient-display-svg-x11.pid
-rw-r----- 1 maperez14692 maperez14692 5 Oct 15 15:48 .vboxclient-draganddrop.pid
-rw-r----- 1 maperez14692 maperez14692 5 Oct 15 15:48 .vboxclient-seamless.pid
drwxr-xr-x 2 maperez14692 maperez14692 4096 Sep 19 20:52 Videos
drwxrwxr-x 3 maperez14692 maperez14692 4096 Sep 21 14:03 .vscode
maperez14692@CIS106VM:/dev/disk/by-id$ ls /usr/share/themes/ -t
Yaru Yaru-dark-hdpi Yaru-olive-dark Yaru-red-dark Default
Yaru-bark Yaru-dark-xdpi Yaru-prussiangreen Yaru-sage Emacs
Yaru-bark-dark Yaru-hdpi Yaru-prussiangreen-dark Yaru-sage-dark Raleigh
Yaru-blue Yaru-magenta Yaru-purple Yaru-viridian Adwaita
Yaru-blue-dark Yaru-magenta-dark Yaru-purple-dark Yaru-viridian-dark Adwaita-dark
Yaru-dark Yaru-olive Yaru-red Yaru-xdpi HighContrast
maperez14692@CIS106VM:/dev/disk/by-id$ ls /usr/share/ -X
accountsservice gnome-software pam
aclocal gnome-system-monitor pam-configs
acpi-support gnome-todo perl
adduser gnome-tweaks perl5
aisleriot gnome-video-effects perl-openssl-defaults
alacarte gnupg pipewire
alsa grilo-plugins pixmaps
alsa-base groff pkgconfig
alsa-card-profile grub plymouth
appdata grub-gfxpayload-lists pnm2ppa
app-info gst-plugins-base pocketchinx
applications gtk-doc polkit-1
appport gtk-engines poppler
apps gtksourceview-4 ppd
apturl guile ppp
aspell gupnp-av publicsuffix
avahi gvfs pulseaudio
backgrounds help pyshared
base-files help-langpack python3
base-passwd hplip python-apt
bash-completion hunspell qlogging-categories5
binfmts hwdata qt5
branding hyphen readline
brltty i18n remmina
bug ibus rhythmbox
build-essential ibus-table rig
ca-certificates icons rsync
caffeine-indicator ImageMagick-6 rsyslog
catdoc im-config rubygems-integration
cmake indicator-application rygel
cogl indicator-power samba
color indicators seahorse
colord info secureboot
common-licenses initramfs-tools sensible-utils

```

```

maperez14692@CIS106VM: /dev/disk/by-id
maperez14692@CIS106VM: /dev/disk/by-id
maperez14692@CIS106VM: ~/lab4files

consolefonts      installed-tests   session-migration
console-setup     lpp-usb          sgml
consoletrans     iptables         sgml-base
cowsay           iso-codes        sgml-data
cups             java             snmp
dbus-1           javascript       software-properties
dconf            kconf_update     solid
debconf          kde4             sounds
debhelper        keyrings         source-highlight
debianutils      kf5              speech-dispatcher
defaults         knotifications5  ssl-cert
desktop-directories kservices5       system-config-printer
dict            kservicetypes5  systemd
dictionaries-common language-selector systemtap
distro-info      language-support tabset
djvu            language-tools  tcltk
dns             libcaca         terminfo
dnsmasq-base     libc-bin        tex-common
doc             libdebuginfod-common texlive
doc-base         libdrm          texmf
dpkg            libexrttextcat  themes
emacs           libgnomekbd     thumbnailers
emacsen-common  libgweather     tilix
enchant-2       libgweather-4   totem
eog             libinput        tracker3
epiphany-browser liblangtag       tracker3-miners
evince          liblouis         transmission
evolution-data-server liblouisutdm1    ubuntu
figlet          libmysofa        ubuntu-drivers-common
file            libreoffice      ubuntu-release-upgrader
file-roller     libvenge         ubuntu-wayland
fish           libthai          ucf
flameshot       libwacom         ufw
flatpak         lightdm          unattended-upgrades
fontconfig      lintian          unity
fonts           linux-sound-base update-manager
fonts-droid-fallback locale           update-notifier
fonts-sil-abyssinica locale-langpack upstart
fonts-sil-padauk locales          usb-creator
foo2qpd1        lto-disabled-list usb_modeswitch
foo2zjs         m2300w          vala
fwupd          man             vim
gamemode        man-db          virtualbox
games           mate-panel      vlc
gcc            maven-repo      vulkan
GConf          media-player-info w3m
gdb            menu            wayland-sessions
gdm            mesa-demos      X11
geany          metainfo        xapps-common

GeoIP           mime            xml
gettext         misc            xml-core
ghostscript     mobile-broadband-provider-info xsessions
git-core        ModemManager   yelp
gitweb          mousetweaks    yelp-xsl
glade           mythes         zenity
glvnd           nano           zoneinfo
gnome            nautilus       zoneinfo-icu
gnome-applets   nautilus-python zsh
gnome-background-properties nautilus-share gir-1.0
gnome-bluetooth nemo           glib-2.0
gnome-control-center netpbm         gnome-bluetooth-3.0
gnome-initial-setup netplan        goa-1.0
gnome-logs      numpy3         gstreamer-1.0
gnome-mahjongg  open-vm-tools gtk-4.0
gnome-mines     openvpn        gtksourceview-2.0
gnome-panel     orca           gtksourceview-3.0
gnome-remote-desktop os-prober      gupnp-dlna-2.0
gnome-session   p11-kit        org.gnome.Characters
gnome-settings-daemon package-data-downloads drirc.d
gnome-shell     PackageKit

maperez14692@CIS106VM: /dev/disk/by-id$

```