

Lab 9

Question #1: Working with saving commands output to a file.

```
aec@a Debian: ~/cis106/labs/lab8
aec@a Debian:~$ cd ~/cis106/labs/
aec@a Debian:~/cis106/labs$ mkdir lab8
aec@a Debian:~/cis106/labs$ cd lab8
aec@a Debian:~/cis106/labs/lab8$ echo "All files in my home directory"
All files in my home directory
aec@a Debian:~/cis106/labs/lab8$ echo "All files in my home directory" > file_report.t
xt
aec@a Debian:~/cis106/labs/lab8$ ls -Am ~ >> file_report.txt
aec@a Debian:~/cis106/labs/lab8$ cat file_report.txt
```

```
aec@a Debian: ~/cis106/labs/lab8
All files in my home directory
7, assets, .bash_aliases, .bash_history, .bash_logout, .bashrc, .bastetrc,
Blackboard Document Rendering.pdf, .cache, cis106, cis180, class_linux_106,
.config, Desktop, .dotnet, Downloads, essentials.sh, essentials.sh.1,
essentials.sh.2, .face, .face.icon, file_report.txt, .gitconfig, .gnupg,
inClassActivity, lab5files, lab6-challenge1, .local, marstenHouse,
marstenhouse.sh, .mozilla, music, Music, Pictures, .pki, practicels,
practicels.tar.xz, .profile, Public, Screenshot+From+2025-10-02+21-11-55.pdf,
Screenshot+From+2025-10-02+21-15-02.pdf, scripts, .ssh,
.sudo_as_admin_successful, Templates, Videos, .vscode, vscode.sh, wallpapers,
website, website, website_ch1_lab7, .wget-hsts, wildcardpractice,
wildcards-in-class-activity-instructions.html, .wine
aec@a Debian:~/cis106/labs/lab8$
```

Question #2: Working with the | (pipe)

```
aec@a Debian: ~/cis106/labs/lab8
aec@a Debian:~/cis106/labs/lab8$ echo "Total number of files in my home directory" >> file_report.txt
aec@a Debian:~/cis106/labs/lab8$ ls -a
.  ..  file_report.txt  lab8_q1.2.png  lab8_q1.png
aec@a Debian:~/cis106/labs/lab8$ ls -lA ~ | grep "^-" | wc -l
21
aec@a Debian:~/cis106/labs/lab8$ ls -lA ~ | grep "^-" | wc -l >> file_report.txt
aec@a Debian:~/cis106/labs/lab8$ echo "Total number of directories in my home directory" >> file_repor
t.txt
aec@a Debian:~/cis106/labs/lab8$
aec@a Debian:~/cis106/labs/lab8$ ls -lA ~ | grep "^d" | wc -l >> file_report.txt
aec@a Debian:~/cis106/labs/lab8$ tail file_report.txt
```

```

aec@aedebian: ~/cis106/labs/lab8$ cat file_report.txt
marstenhouse.sh, .mozilla, music, Music, Pictures, .pki, practicels,
practicels.tar.xz, .profile, Public, Screenshot+From+2025-10-02+21-11-55.pdf,
Screenshot+From+2025-10-02+21-15-02.pdf, scripts, .ssh,
.sudo_as_admin_successful, Templates, Videos, .vscode, vscode.sh, wallpapers,
wbsite, website, website_ch1_lab7, .wget-hsts, wildcardpractice,
wildcards-in-class-activity-instructions.html, .wine
Total number of files in my home directory
21
Total number of directories in my home directory
34
aec@aedebian:~/cis106/labs/lab8$

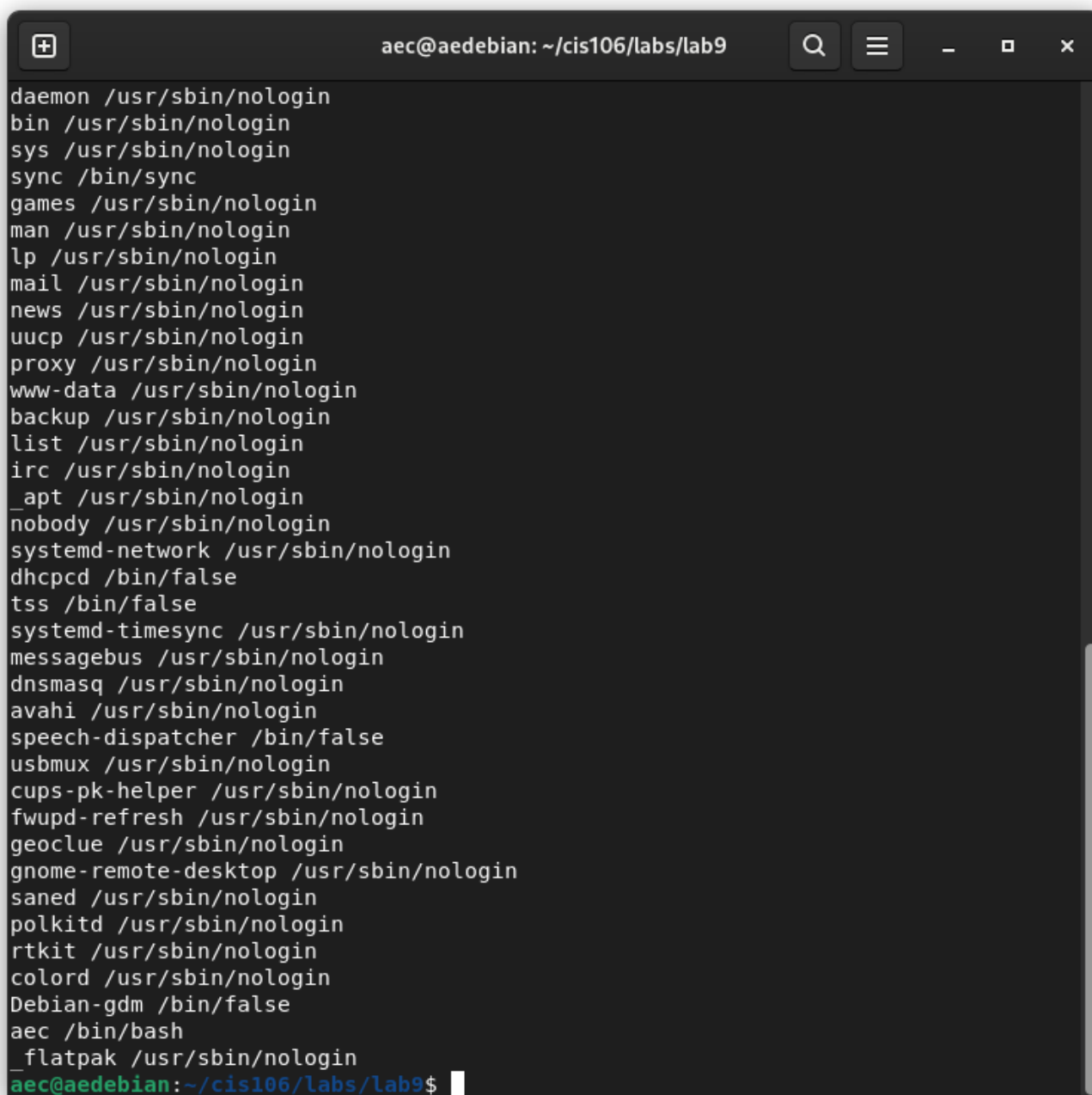
```

```

aec@aedebian: ~
drwxrwxr-x  5 aec aec   4096 Nov  5 18:38 lab6-challenge1
drwx-----  4 aec aec   4096 Oct  7 00:54 .local
drwxrwxr-x  3 aec aec   4096 Oct 29 16:41 marstenHouse
drwxrwxr-x  5 aec aec   4096 Oct  7 01:10 .mozilla
drwxrwxr-x  4 aec aec   4096 Nov 16 14:06 music
drwxr-xr-x  3 aec aec   4096 Nov  8 17:47 Music
drwxr-xr-x  3 aec aec   4096 Nov 20 18:40 Pictures
drwx-----  3 aec aec   4096 Oct  7 16:29 .pki
drwxrwxr-x  2 aec aec   4096 Feb 27 2022 practicels
drwxr-xr-x  2 aec aec   4096 Oct  7 00:54 Public
drwxrwxr-x  2 aec aec   4096 Nov  5 17:43 scripts
drwx-----  2 aec aec   4096 Oct  7 01:15 .ssh
drwxr-xr-x  2 aec aec   4096 Oct  7 00:54 Templates
drwxr-xr-x  2 aec aec   4096 Oct  7 00:54 Videos
drwxrwxr-x  4 aec aec   4096 Oct  7 16:27 .vscode
drwxrwxr-x  3 aec aec   4096 Nov 16 14:07 wallpapers
drwxrwxr-x  2 aec aec   4096 Nov  5 17:07 wbsite
drwxrwxr-x  3 aec aec   4096 Nov  5 18:00 website
drwxrwxr-x  8 aec aec   4096 Nov 16 14:40 website_ch1_lab7
drwxrwxr-x  2 aec aec   4096 Nov 16 13:43 wildcardpractice
drwxrwxr-x  4 aec aec   4096 Oct 22 20:34 .wine
aec@aedebian:~$ ls -lA | grep "^d" | wc -l >> file_report.txt
bash: wc -l: command not found
aec@aedebian:~$ ls -lA | grep "^d" | wc -l >> file_report.txt
aec@aedebian:~$ tail file_report.txt
.sudo_as_admin_successful, Templates, Videos, .vscode, vscode.sh, wallpapers,
wbsite, website, website_ch1_lab7, .wget-hsts, wildcardpractice,
wildcards-in-class-activity-instructions.html, .wine
Total number of files in my home directory
21
Total number of directories in my home directory
34
0
34
34
aec@aedebian:~$

```

Question #3

A terminal window titled 'aec@ae.debian: ~/cis106/labs/lab9'. The window contains a list of system users and their default shells. Most users have '/usr/sbin/nologin' as their shell, while 'aec' has '/bin/bash'. The list includes standard system users like daemon, bin, sys, sync, games, man, lp, mail, news, uucp, proxy, www-data, backup, list, irc, _apt, nobody, systemd-network, dhcpcd, tss, systemd-timesync, messagebus, dnsmasq, avahi, speech-dispatcher, usbmux, cups-pk-helper, fwupd-refresh, geoclue, gnome-remote-desktop, saned, polkitd, rtkit, colord, and Debian-gdm. The prompt 'aec@ae.debian:~/cis106/labs/lab9\$' is visible at the bottom.

```
aec@ae.debian: ~/cis106/labs/lab9
daemon /usr/sbin/nologin
bin /usr/sbin/nologin
sys /usr/sbin/nologin
sync /bin/sync
games /usr/sbin/nologin
man /usr/sbin/nologin
lp /usr/sbin/nologin
mail /usr/sbin/nologin
news /usr/sbin/nologin
uucp /usr/sbin/nologin
proxy /usr/sbin/nologin
www-data /usr/sbin/nologin
backup /usr/sbin/nologin
list /usr/sbin/nologin
irc /usr/sbin/nologin
_apt /usr/sbin/nologin
nobody /usr/sbin/nologin
systemd-network /usr/sbin/nologin
dhcpcd /bin/false
tss /bin/false
systemd-timesync /usr/sbin/nologin
messagebus /usr/sbin/nologin
dnsmasq /usr/sbin/nologin
avahi /usr/sbin/nologin
speech-dispatcher /bin/false
usbmux /usr/sbin/nologin
cups-pk-helper /usr/sbin/nologin
fwupd-refresh /usr/sbin/nologin
geoclue /usr/sbin/nologin
gnome-remote-desktop /usr/sbin/nologin
saned /usr/sbin/nologin
polkitd /usr/sbin/nologin
rtkit /usr/sbin/nologin
colord /usr/sbin/nologin
Debian-gdm /bin/false
aec /bin/bash
_flatpak /usr/sbin/nologin
aec@ae.debian:~/cis106/labs/lab9$
```

```
aec@aedian: ~/cis106/labs/lab9
daemon /usr/sbin/nologin /usr/sbin
bin /usr/sbin/nologin /bin
sys /usr/sbin/nologin /dev
sync /bin/sync /bin
games /usr/sbin/nologin /usr/games
man /usr/sbin/nologin /var/cache/man
lp /usr/sbin/nologin /var/spool/lpd
mail /usr/sbin/nologin /var/mail
news /usr/sbin/nologin /var/spool/news
uucp /usr/sbin/nologin /var/spool/uucp
proxy /usr/sbin/nologin /bin
www-data /usr/sbin/nologin /var/www
backup /usr/sbin/nologin /var/backups
list /usr/sbin/nologin /var/list
irc /usr/sbin/nologin /run/ircd
_apt /usr/sbin/nologin /nonexistent
nobody /usr/sbin/nologin /nonexistent
systemd-network /usr/sbin/nologin /
dhcpcd /bin/false /usr/lib/dhcpcd
tss /bin/false /var/lib/tpm
systemd-timesync /usr/sbin/nologin /
messagebus /usr/sbin/nologin /nonexistent
dnsmasq /usr/sbin/nologin /var/lib/misc
avahi /usr/sbin/nologin /run/avahi-daemon
speech-dispatcher /bin/false /run/speech-dispatcher
usbmux /usr/sbin/nologin /var/lib/usbmux
cups-pk-helper /usr/sbin/nologin /nonexistent
fwupd-refresh /usr/sbin/nologin /var/lib/fwupd
geoclue /usr/sbin/nologin /var/lib/geoclue
gnome-remote-desktop /usr/sbin/nologin /var/lib/gnome-remote-desktop
saned /usr/sbin/nologin /var/lib/saned
polkitd /usr/sbin/nologin /
rtkit /usr/sbin/nologin /proc
colord /usr/sbin/nologin /var/lib/colord
Debian-gdm /bin/false /var/lib/gdm3
aec /bin/bash /home/aec
_flatpak /usr/sbin/nologin /nonexistent
aec@aedian:~/cis106/labs/lab9$
```

```

aec@aedebian: ~/cis106/labs/lab9
avahi /usr/sbin/nologin
speech-dispatcher /bin/false
usbmux /usr/sbin/nologin
cups-pk-helper /usr/sbin/nologin
fwupd-refresh /usr/sbin/nologin
geoclue /usr/sbin/nologin
gnome-remote-desktop /usr/sbin/nologin
saned /usr/sbin/nologin
polkitd /usr/sbin/nologin
rtkit /usr/sbin/nologin
colord /usr/sbin/nologin
Debian-gdm /bin/false
aec /bin/bash
_flatpak /usr/sbin/nologin
aec@aedebian:~/cis106/labs/lab9$ awk -F":" '{print "The user " $1,"logs in with:"$NF,"and its home dir is: "$6}' /etc/passwd
The user root logs in with:/bin/bash and its home dir is: /root
The user daemon logs in with:/usr/sbin/nologin and its home dir is: /usr/sbin
The user bin logs in with:/usr/sbin/nologin and its home dir is: /bin
The user sys logs in with:/usr/sbin/nologin and its home dir is: /dev
The user sync logs in with:/bin/sync and its home dir is: /bin
The user games logs in with:/usr/sbin/nologin and its home dir is: /usr/games
The user man logs in with:/usr/sbin/nologin and its home dir is: /var/cache/man
The user lp logs in with:/usr/sbin/nologin and its home dir is: /var/spool/lpd
The user mail logs in with:/usr/sbin/nologin and its home dir is: /var/mail
The user news logs in with:/usr/sbin/nologin and its home dir is: /var/spool/news
The user uucp logs in with:/usr/sbin/nologin and its home dir is: /var/spool/uucp
The user proxy logs in with:/usr/sbin/nologin and its home dir is: /bin
The user www-data logs in with:/usr/sbin/nologin and its home dir is: /var/www
The user backup logs in with:/usr/sbin/nologin and its home dir is: /var/backups
The user list logs in with:/usr/sbin/nologin and its home dir is: /var/list
The user irc logs in with:/usr/sbin/nologin and its home dir is: /run/ircd
The user apt logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
The user nobody logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
The user systemd-network logs in with:/usr/sbin/nologin and its home dir is: /
The user dhcpcd logs in with:/bin/false and its home dir is: /usr/lib/dhcpcd
The user tss logs in with:/bin/false and its home dir is: /var/lib/tpm
The user systemd-timesync logs in with:/usr/sbin/nologin and its home dir is: /
The user messagebus logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
The user dnsmasq logs in with:/usr/sbin/nologin and its home dir is: /var/lib/misc
The user avahi logs in with:/usr/sbin/nologin and its home dir is: /run/avahi-daemon
The user speech-dispatcher logs in with:/bin/false and its home dir is: /run/speech-dispatcher
The user usbmux logs in with:/usr/sbin/nologin and its home dir is: /var/lib/usbmux
The user cups-pk-helper logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
The user fwupd-refresh logs in with:/usr/sbin/nologin and its home dir is: /var/lib/fwupd
The user geoclue logs in with:/usr/sbin/nologin and its home dir is: /var/lib/geoclue
The user gnome-remote-desktop logs in with:/usr/sbin/nologin and its home dir is: /var/lib/gnome-remote-desktop
The user saned logs in with:/usr/sbin/nologin and its home dir is: /var/lib/saned
The user polkitd logs in with:/usr/sbin/nologin and its home dir is: /
The user rtkit logs in with:/usr/sbin/nologin and its home dir is: /proc
The user colord logs in with:/usr/sbin/nologin and its home dir is: /var/lib/colord
The user Debian-gdm logs in with:/bin/false and its home dir is: /var/lib/gdm3
The user aec logs in with:/bin/bash and its home dir is: /home/aec
The user _flatpak logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
aec@aedebian:~/cis106/labs/lab9$

```

```

aec@aedebian: ~/cis106/labs/lab9
dnsmasq = /usr/sbin/nologin
avahi = /usr/sbin/nologin
speech-dispatcher = /bin/false
usbmux = /usr/sbin/nologin
cups-pk-helper = /usr/sbin/nologin
fwupd-refresh = /usr/sbin/nologin
geoclue = /usr/sbin/nologin
gnome-remote-desktop = /usr/sbin/nologin
saned = /usr/sbin/nologin
polkitd = /usr/sbin/nologin
rtkit = /usr/sbin/nologin
colord = /usr/sbin/nologin
Debian-gdm = /bin/false
aec = /bin/bash
_flatpak = /usr/sbin/nologin
aec@aedebian:~/cis106/labs/lab9$ awk -F":" '{print $1" = "$NF}' /etc/passwd | gr
ep "/bin/bash"
root = /bin/bash
aec = /bin/bash
aec@aedebian:~/cis106/labs/lab9$ awk -F":" '{print $1" = "$NF}' /etc/passwd | gr
ep "/bin/bash" >> report_user.txt
aec@aedebian:~/cis106/labs/lab9$ awk -F":" '{print $1" = "$NF}' /etc/passwd >> r
eport_user.txt
aec@aedebian:~/cis106/labs/lab9$

```

```

aec@aedebian: ~/cis106/labs/lab9
The user saned logs in with: /usr/sbin/nologin and its home dir is: /var/lib/saned
The user polkitd logs in with: /usr/sbin/nologin and its home dir is: /
The user rtkit logs in with: /usr/sbin/nologin and its home dir is: /proc
The user colord logs in with: /usr/sbin/nologin and its home dir is: /var/lib/colord
The user Debian-gdm logs in with: /bin/false and its home dir is: /var/lib/gdm3
The user aec logs in with: /bin/bash and its home dir is: /home/aec
The user flatpak logs in with: /usr/sbin/nologin and its home dir is: /nonexistent
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print "The user " $1, "logs in with: " $NF, "and its home dir is: " $6}' /etc/passwd > report_user.txt
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print "The user " $1, "logs in with: " $NF, "and its home dir is: " $6}' /etc/passwd | grep "/bin/bash"
The user root logs in with: /bin/bash and its home dir is: /root
The user aec logs in with: /bin/bash and its home dir is: /home/aec
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print $1" = "$NF}' /etc/passwd
awk: line 1: syntax error at or near [
awk: line 1: extra '}'
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print $1" = "$NF}' /etc/passwd
root = /bin/bash
daemon = /usr/sbin/nologin
bin = /usr/sbin/nologin
sys = /usr/sbin/nologin
sync = /bin/sync
games = /usr/sbin/nologin
man = /usr/sbin/nologin
lp = /usr/sbin/nologin
mail = /usr/sbin/nologin
news = /usr/sbin/nologin
uucp = /usr/sbin/nologin
proxy = /usr/sbin/nologin
www-data = /usr/sbin/nologin
backup = /usr/sbin/nologin
list = /usr/sbin/nologin
irc = /usr/sbin/nologin
_apt = /usr/sbin/nologin
nobody = /usr/sbin/nologin
systemd-network = /usr/sbin/nologin
dhcpcd = /bin/false
tss = /bin/false
systemd-timesync = /usr/sbin/nologin
messagebus = /usr/sbin/nologin
dnsmasq = /usr/sbin/nologin
avahi = /usr/sbin/nologin
speech-dispatcher = /bin/false
usbmux = /usr/sbin/nologin
cups-pk-helper = /usr/sbin/nologin
fwupd-refresh = /usr/sbin/nologin
geoclue = /usr/sbin/nologin
gnome-remote-desktop = /usr/sbin/nologin
saned = /usr/sbin/nologin
polkitd = /usr/sbin/nologin
rtkit = /usr/sbin/nologin
colord = /usr/sbin/nologin
Debian-gdm = /bin/false
aec = /bin/bash
flatpak = /usr/sbin/nologin
aec@aedebian: ~/cis106/labs/lab9$

```

```

aec@aedebian: ~/cis106/labs/lab9
dnsmasq = /usr/sbin/nologin
avahi = /usr/sbin/nologin
speech-dispatcher = /bin/false
usbmux = /usr/sbin/nologin
cups-pk-helper = /usr/sbin/nologin
fwupd-refresh = /usr/sbin/nologin
geoclue = /usr/sbin/nologin
gnome-remote-desktop = /usr/sbin/nologin
saned = /usr/sbin/nologin
polkitd = /usr/sbin/nologin
rtkit = /usr/sbin/nologin
colord = /usr/sbin/nologin
Debian-gdm = /bin/false
aec = /bin/bash
_flatpak = /usr/sbin/nologin
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print $1" = "$NF}' /etc/passwd | gr
ep "/bin/bash"
root = /bin/bash
aec = /bin/bash
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print $1" = "$NF}' /etc/passwd | gr
ep "/bin/bash" >> report_user.txt
aec@aedebian: ~/cis106/labs/lab9$ awk -F: '{print $1" = "$NF}' /etc/passwd >> r
eport_user.txt
aec@aedebian: ~/cis106/labs/lab9$

```

```
aec@adebian: ~/cis106/labs/lab9

The user speech-dispatcher logs in with:/bin/false and its home dir is: /run/speech-dispatcher
The user usbmux logs in with:/usr/sbin/nologin and its home dir is: /var/lib/usbmux
The user cups-pk-helper logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
The user fwupd-refresh logs in with:/usr/sbin/nologin and its home dir is: /var/lib/fwupd
The user geoclue logs in with:/usr/sbin/nologin and its home dir is: /var/lib/geoclue
The user gnome-remote-desktop logs in with:/usr/sbin/nologin and its home dir is: /var/lib/gnome-remote-desktop
The user saned logs in with:/usr/sbin/nologin and its home dir is: /var/lib/saned
The user polkitd logs in with:/usr/sbin/nologin and its home dir is: /
The user rtkit logs in with:/usr/sbin/nologin and its home dir is: /proc
The user colord logs in with:/usr/sbin/nologin and its home dir is: /var/lib/colord
The user Debian-gdm logs in with:/bin/false and its home dir is: /var/lib/gdm3
The user aec logs in with:/bin/bash and its home dir is: /home/aec
The user flatpak logs in with:/usr/sbin/nologin and its home dir is: /nonexistent
root = /bin/bash
aec = /bin/bash
root = /bin/bash
daemon = /usr/sbin/nologin
bin = /usr/sbin/nologin
sys = /usr/sbin/nologin
sync = /bin/sync
games = /usr/sbin/nologin
man = /usr/sbin/nologin
lp = /usr/sbin/nologin
mail = /usr/sbin/nologin
news = /usr/sbin/nologin
uucp = /usr/sbin/nologin
proxy = /usr/sbin/nologin
www-data = /usr/sbin/nologin
backup = /usr/sbin/nologin
list = /usr/sbin/nologin
irc = /usr/sbin/nologin
apt = /usr/sbin/nologin
nobody = /usr/sbin/nologin
systemd-network = /usr/sbin/nologin
dhcpcd = /bin/false
tss = /bin/false
systemd-timesync = /usr/sbin/nologin
messagebus = /usr/sbin/nologin
dnsmasq = /usr/sbin/nologin
avahi = /usr/sbin/nologin
speech-dispatcher = /bin/false
usbmux = /usr/sbin/nologin
cups-pk-helper = /usr/sbin/nologin
fwupd-refresh = /usr/sbin/nologin
geoclue = /usr/sbin/nologin
gnome-remote-desktop = /usr/sbin/nologin
saned = /usr/sbin/nologin
polkitd = /usr/sbin/nologin
rtkit = /usr/sbin/nologin
colord = /usr/sbin/nologin
Debian-gdm = /bin/false
aec = /bin/bash
flatpak = /usr/sbin/nologin
aec@adebian: ~/cis106/labs/lab9$
```

Question #4

```
Tilix: aec@adebian: ~/cis106/labs/lab9

1: aec@adebian: ~/cis106/labs/lab9
aec@adebian:~$ grp -i "honda" ~/Music/Documents/sample_files/Csv/cars.csv >> honda.csv
bash: grp: command not found
aec@adebian:~$ grep -i "honda" ~/Music/Documents/sample_files/Csv/cars.csv >> honda.csv
aec@adebian:~$ cd ~/cis106/labs/lab9
aec@adebian:~/cis106/labs/lab9$ grep -i "honda" ~/Music/Documents/sample_files/Csv/cars.csv >> honda.csv
aec@adebian:~/cis106/labs/lab9$ cat honda.csv
Honda Civic;24.0;4;120.0;97.00;2489.;15.0;74;Japan
Honda Civic CVCC;33.0;4;91.00;53.00;1795.;17.5;75;Japan
Honda Civic;33.0;4;91.00;53.00;1795.;17.4;76;Japan
Honda Accord CVCC;31.5;4;98.00;68.00;2045.;19.5;77;Japan
Honda Civic CVCC;36.1;4;91.00;60.00;1800.;16.4;78;Japan
Honda Accord LX;29.5;4;98.00;68.00;2135.;16.6;78;Japan
Honda Civic 1500 gl;44.6;4;91.00;67.00;1850.;13.8;80;Japan
Honda Accord;32.4;4;107.0;72.00;2200.;17.0;80;Japan
Honda Civic 1300;35.1;4;81.00;60.00;1760.;16.1;81;Japan
Honda Prelude;33.7;4;107.0;75.00;2210.;14.4;81;Japan
Honda Accord;36.0;4;107.0;75.00;2205.;14.5;82;Japan
Honda Civic;38.0;4;91.00;67.00;1965.;15.0;82;Japan
Honda Civic (auto);32.0;4;91.00;67.00;1965.;15.7;82;Japan
aec@adebian:~/cis106/labs/lab9$

2: aec@adebian: ~/Music/Documents/sample_files/Csv
aec@adebian:~$ cd ~/Music/Documents/sample_files/Csv/
aec@adebian:~/Music/Documents/sample_files/Csv$ ls
cars.csv cereal.csv contacts.csv country.csv fake_users.csv sorted_cars.csv users_and_ips.csv
aec@adebian:~/Music/Documents/sample_files/Csv$ head -n1 cars.csv
Car;MPG;Cylinders;Displacement;Horsepower;Weight;Acceleration;Model;Origin
aec@adebian:~/Music/Documents/sample_files/Csv$
```

```
1: aec@aedeblan: ~/cis106/labs/lab9
aec@aedeblan:~/cis106/labs/lab9$ sed 's/;/,/g' honda1.csv
Honda Civic,24.0,4,120.0,97.00,2489,15.0,74,Japan
Honda Civic CVCC,33.0,4,91.00,53.00,1795,17.5,75,Japan
Honda Civic,33.0,4,91.00,53.00,1795,17.4,76,Japan
Honda Accord CVCC,31.5,4,98.00,68.00,2045,18.5,77,Japan
Honda Civic CVCC,36.1,4,91.00,68.00,1800,16.4,78,Japan
Honda Accord LX,29.5,4,98.00,68.00,2135,16.6,78,Japan
Honda Civic 1500 gl,44.6,4,91.00,67.00,1850,13.8,80,Japan
Honda Accord,32.4,4,107.0,72.00,2290,17.0,80,Japan
Honda Civic 1300,35.1,4,81.00,68.00,1760,16.1,81,Japan
Honda Prelude,33.7,4,107.0,75.00,2210,14.4,81,Japan
Honda Accord,36.0,4,107.0,75.00,2205,14.5,82,Japan
Honda Civic,38.0,4,91.00,67.00,1965,15.0,82,Japan
Honda Civic (auto),32.0,4,91.00,67.00,1965,15.7,82,Japan
aec@aedeblan:~/cis106/labs/lab9$ sed 's/;/,/g' honda1.csv > honda2.csv
aec@aedeblan:~/cis106/labs/lab9$

2: aec@aedeblan: ~/Music/Documents/sample_files/Csv
aec@aedeblan:~/Music/Documents/sample_files/Csv$ cd
```

```
1: aec@aedeblan: ~/cis106/labs/lab9
Honda Accord CVCC 4 68.00
Honda Civic CVCC 4 60.00
Honda Accord LX 4 68.00
Honda Civic 1500 gl 4 67.00
Honda Accord 4 72.00
Honda Civic 1300 4 60.00
Honda Prelude 4 75.00
Honda Accord 4 75.00
Honda Civic 4 67.00
Honda Civic (auto) 4 67.00
aec@aedeblan:~/cis106/labs/lab9$ awk -F"," 'NR > 1{print $1,$3,$5}' honda2.csv | sed 's/ , /,/g' | sed 's/Honda /Honda /g'
Honda Civic CVCC 4 53.00
Honda Civic 4 53.00
Honda Accord CVCC 4 68.00
Honda Civic CVCC 4 60.00
Honda Accord LX 4 68.00
Honda Civic 1500 gl 4 67.00
Honda Accord 4 72.00
Honda Civic 1300 4 60.00
Honda Prelude 4 75.00
Honda Accord 4 75.00
Honda Civic 4 67.00
Honda Civic (auto) 4 67.00
aec@aedeblan:~/cis106/labs/lab9$ awk -F"," 'NR > 1{print $1,$3,$5}' honda2.csv | sed 's/ , /,/g' | sed 's/Honda /Honda /g' >> honda3.csv
aec@aedeblan:~/cis106/labs/lab9$

2: aec@aedeblan: ~/cis106/labs/lab9
aec@aedeblan:~/cis106/labs/lab9$ cat honda3.csv
model,cylinder,hp
Honda Civic CVCC 4 53.00
Honda Civic 4 53.00
Honda Accord CVCC 4 68.00
Honda Civic CVCC 4 60.00
Honda Accord LX 4 68.00
Honda Civic 1500 gl 4 67.00
Honda Accord 4 72.00
Honda Civic 1300 4 60.00
Honda Prelude 4 75.00
Honda Accord 4 75.00
Honda Civic 4 67.00
Honda Civic (auto) 4 67.00
aec@aedeblan:~/cis106/labs/lab9$
```



```
Tilix: aec@aedebian: ~/cis106/labs/lab9
1:aec@aedebian: ~/cis106/labs/lab9
Honda Civic 1300 4 60.00
Honda Prelude 4 75.00
Honda Accord 4 75.00
Honda Civic 4 67.00
Honda Civic (auto) 4 67.00
aec@aedebian:~/cis106/labs/lab9$ awk -F"," 'NR > 1{print $1,$3,$5}' honda2.csv | sed 's/, ,/ /g' | sed 's/Honda /Honda /g' >> honda3.csv
aec@aedebian:~/cis106/labs/lab9$ batcat honda3.csv
File: honda3.csv
1 model,cylinder,hp
2 Honda Civic CVCC 4 53.00
3 Honda Civic 4 53.00
4 Honda Accord CVCC 4 68.00
5 Honda Civic CVCC 4 60.00
6 Honda Accord LX 4 68.00
7 Honda Civic 1500 gl 4 67.00
8 Honda Accord 4 72.00
9 Honda Civic 1300 4 60.00
10 Honda Prelude 4 75.00
11 Honda Accord 4 75.00
12 Honda Civic 4 67.00
13 Honda Civic (auto) 4 67.00
aec@aedebian:~/cis106/labs/lab9$
2:aec@aedebian: ~
(Reading database ... 202527 files and directories currently installed.)
Preparing to unpack .../libhttp-parser2.9.2-9.4-6+b2_amd64.deb ...
Unpacking libhttp-parser2.9:amd64 (2.9.4-6+b2) ...
Selecting previously unselected package libbbedx509-7:amd64.
Preparing to unpack .../libbbedx509-7.3.6.4-2_amd64.deb ...
Unpacking libbbedx509-7:amd64 (3.6.4-2) ...
Selecting previously unselected package libmbdts21:amd64.
Preparing to unpack .../libmbdts21.3.6.4-2_amd64.deb ...
Unpacking libmbdts21:amd64 (3.6.4-2) ...
Selecting previously unselected package libgit2-1.9:amd64.
Preparing to unpack .../libgit2-1.9.1-9.0+ds-2_amd64.deb ...
Unpacking libgit2-1.9:amd64 (1.9.0+ds-2) ...
Selecting previously unselected package bat.
Preparing to unpack .../bat.0.25.0-2+b2_amd64.deb ...
Unpacking bat (0.25.0-2+b2) ...
Setting up libbbedx509-7:amd64 (3.6.4-2) ...
Setting up libmbdts21:amd64 (3.6.4-2) ...
Setting up libhttp-parser2.9:amd64 (2.9.4-6+b2) ...
Setting up libgit2-1.9:amd64 (1.9.0+ds-2) ...
Setting up bat (0.25.0-2+b2) ...
Processing triggers for man-db (2.13.1-1) ...
Processing triggers for libc-bin (2.41-12) ...
aec@aedebian:~$
```

Challenge Question

```
Tili: aec@aedebian: ~ - /cis106/labs/lab9/broken
1: aec@aedebian: ~ - /cis106/labs/lab9/broken
aec@aedebian:~$ cd ~/cis106/labs/lab9/broken
aec@aedebian:~/cis106/labs/lab9/broken$ awk 'h/{href|src|/}' index.html
<link rel="icon" type="image/x-icon" href="assets/favicon.ico" />
<link rel="preconnect" href="https://fonts.googleapis.com" />
<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin />
<link href="https://fonts.googleapis.com/css2?family=PlusJakartaSans:wght@100;200;300;400;500;600;700;800;900&display=swap" rel="stylesheet" />
<link href="https://cdn.jsdelivr.net/npm/bootstrap-icons@1.8.1/font/bootstrap-icons.css" rel="stylesheet" />
<link href="css/styles.css" rel="stylesheet" />
<a class="nav-bar-brand" href="index.html"><span class="fw-bolder text-primary">Start Bootstrap</span></a>
<li class="nav-item"><a class="nav-link" href="index.html">Home</a></li>
<li class="nav-item"><a class="nav-link" href="resume.html">Resume</a></li>
<li class="nav-item"><a class="nav-link" href="projects.html">Projects</a></li>
<li class="nav-item"><a class="nav-link" href="contact.html">Contact</a></li>
<a class="btn btn-primary btn-lg px-5 py-3 me-sm-3 fs-6 fw-bolder" href="resume.html">Resumec</a>
<a class="btn btn-outline-dark btn-lg px-5 py-3 fs-6 fw-bolder" href="projects.html">Projects</a>

<a class="text-gradient" href="#"><i class="bi bi-twitter">/i</a>
<a class="text-gradient" href="#"><i class="bi bi-linkedin">/i</a>
<a class="text-gradient" href="#"><i class="bi bi-github">/i</a>
<a class="small" href="#">Privacy</a>
<a class="small" href="#">Terms</a>
<a class="small" href="#">Contact</a>
<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.2.3/dist/js/bootstrap.bundle.min.js"></script>
<script src="js/scripts.js"></script>
aec@aedebian:~/cis106/labs/lab9/broken$
2: aec@aedebian: ~ - /cis106/labs/lab9/broken
aec@aedebian:~$ cd ~/cis106/labs/lab9/broken
aec@aedebian:~/cis106/labs/lab9/broken$ ls
assets contact.html css favicon.ico index.html js projects.html resume.html styles.css
aec@aedebian:~/cis106/labs/lab9/broken$ mv favicon.ico assets/
aec@aedebian:~/cis106/labs/lab9/broken$ ls
assets contact.html css index.html js projects.html resume.html styles.css
aec@aedebian:~/cis106/labs/lab9/broken$ mv styles.css css/
aec@aedebian:~/cis106/labs/lab9/broken$ ls
assets contact.html css index.html js projects.html resume.html
aec@aedebian:~/cis106/labs/lab9/broken$ firefox index.html
aec@aedebian:~/cis106/labs/lab9/broken$
```

