Lab 7

Question 1

```
jsamaan@cis106:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
whoopsie:x:117:124::/nonexistent:/bin/false
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
fwupd-refresh:x:120:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
saned:x:122:129::/var/lib/saned:/usr/sbin/nologin
colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:124:131::/var/lib/geoclue:/usr/sbin/nologin
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
jsamaan:x:1000:1000:Joseph,,,:/home/jsamaan:/bin/bash
```

```
jsamaan@cis106:~$ tac /etc/passwd
_flatpak:x:129:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
vboxadd:x:999:1::/var/run/vboxadd:/bin/false
jsamaan:x:1000:1000:Joseph,,,:/home/jsamaan:/bin/bash
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
geoclue:x:124:131::/var/lib/geoclue:/usr/sbin/nologin
colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
saned:x:122:129::/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
fwupd-refresh:x:120:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
whoopsie:x:117:124::/nonexistent:/bin/false
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin
tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
games:x:5:60:games:/usr/games:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
sys:x:3:3:sys:/dev:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
```

```
jsamaan@cis106:~$ cat -nE /etc/passwd
     1  root:x:0:0:root:/root:/bin/bash$
     2  daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin$
     3  bin:x:2:2:bin:/bin:/usr/sbin/nologin$
     4  sys:x:3:3:sys:/dev:/usr/sbin/nologin$
     5  sync:x:4:65534:sync:/bin:/bin/sync$
     6  games:x:5:60:games:/usr/games:/usr/sbin/nologin$
     7  man:x:6:12:man:/var/cache/man:/usr/sbin/nologin$
     8  lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin$
     9  mail:x:8:8:mail:/var/mail:/usr/sbin/nologin$
    10  news:x:9:9:news:/var/spool/news:/usr/sbin/nologin$
    11  uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin$
    12  proxy:x:13:13:proxy:/bin:/usr/sbin/nologin$
    13  www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin$
    14  backup:x:34:34:backup:/var/backups:/usr/sbin/nologin$
    15  list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin$
    16  irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin$
    17  gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin$
    18  nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin$
    19  systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin$
    20  systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin$
    21  messagebus:x:102:105::/nonexistent:/usr/sbin/nologin$
    22  systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin$
    23  syslog:x:104:111::/home/syslog:/usr/sbin/nologin$
    24  _apt:x:105:65534::/nonexistent:/usr/sbin/nologin$
    25  tss:x:106:113:TPM software stack,,,:/var/lib/tpm:/bin/false$
    26  uuidd:x:107:116::/run/uuidd:/usr/sbin/nologin$
    27  systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin$
    28  tcpdump:x:109:118::/nonexistent:/usr/sbin/nologin$
    29  avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin$
    30  usbmux:x:111:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin$
    31  dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin$
    32  kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin$
    33  avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin$
    34  cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin$
    35  rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin$
    36  whoopsie:x:117:124::/nonexistent:/bin/false$
    37  sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin$
    38  speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false$
    39  fwupd-refresh:x:120:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin$
    40  nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin$
    41  saned:x:122:129::/var/lib/saned:/usr/sbin/nologin$
    42  colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin$
    43  geoclue:x:124:131::/var/lib/geoclue:/usr/sbin/nologin$
    44  pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin$
    45  gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false$
    46  hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false$
    47  gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false$
    48  jsamaan:x:1000:1000:Joseph...:/home/jsamaan:/bin/bash$
```

```
jsamaan@cis106:~$ head -5 /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
jsamaan@cis106:~$
```

```
jsamaan@cis106:~$ tail -5 /etc/passwd
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
jsamaan:x:1000:1000:Joseph,,,:/home/jsamaan:/bin/bash
vboxadd:x:999:1::/var/run/vboxadd:/bin/false
_flatpak:x:129:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
jsamaan@cis106:~$
```

Question 2

```
jsamaan@cis106:~$ cut -d: -f1 /etc/passwd
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
gnats
nobody
systemd-network
systemd-resolve
messagebus
systemd-timesync
syslog
_apt
tss
uuidd
systemd-oom
tcpdump
avahi-autoipd
usbmux
dnsmasq
kernoops
avahi
cups-pk-helper
rtkit
whoopsie
sssd
speech-dispatcher
fwupd-refresh
nm-openvpn
saned
colord
geoclue
pulse
gnome-initial-setup
hplip
gdm
jsamaan
```

```
jsamaan@cis106:~$ cut -d: -f1 /etc/passwd
root
daemon
bin
sys
sync
games
```

```
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
gnats
nobody
systemd-network
systemd-resolve
messagebus
systemd-timesync
syslog
_apt
tss
uuidd
systemd-oom
tcpdump
avahi-autoipd
usbmux
dnsmasq
kernoops
avahi
cups-pk-helper
rtkit
whoopsie
sssd
speech-dispatcher
fwupd-refresh
nm-openvpn
saned
colord
geoclue
pulse
gnome-initial-setup
hplip
gdm
jsamaan
```

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```
jsamaan@cis106:~$ cut -d ":" -f1,6 /etc/passwd
root:/root
daemon:/usr/sbin
bin:/bin
sys:/dev
sync:/bin
games:/usr/games
man:/var/cache/man
lp:/var/spool/lpd
mail:/var/mail
news:/var/spool/news
uucp:/var/spool/uucp
proxy:/bin
www-data:/var/www
backup:/var/backups
list:/var/list
irc:/run/ircd
gnats:/var/lib/gnats
nobody:/nonexistent
systemd-network:/run/systemd
systemd-resolve:/run/systemd
messagebus:/nonexistent
systemd-timesync:/run/systemd
syslog:/home/syslog
_apt:/nonexistent
tss:/var/lib/tpm
uuidd:/run/uuidd
systemd-oom:/run/systemd
tcpdump:/nonexistent
avahi-autoipd:/var/lib/avahi-autoipd
usbmux:/var/lib/usbmux
dnsmasq:/var/lib/misc
kernoops:/
avahi:/run/avahi-daemon
cups-pk-helper:/home/cups-pk-helper
rtkit:/proc
whoopsie:/nonexistent
sssd:/var/lib/sss
speech-dispatcher:/run/speech-dispatcher
fwupd-refresh:/run/systemd
nm-openvpn:/var/lib/openvpn/chroot
saned:/var/lib/saned
colord:/var/lib/colord
geoclue:/var/lib/geoclue
pulse:/run/pulse
gnome-initial-setup:/run/gnome-initial-setup/
hplip:/run/hplip
gdm:/var/lib/gdm3
jsamaan:/home/jsamaan
```

```
jsamaan@cis106:~$ cut -d ":" -f1,6 --output-delimiter="=" /etc/passwd
root=/root
daemon=/usr/sbin
bin=/bin
sys=/dev
sync=/bin
games=/usr/games
man=/var/cache/man
lp=/var/spool/lpd
mail=/var/mail
news=/var/spool/news
uucp=/var/spool/uucp
proxy=/bin
www-data=/var/www
backup=/var/backups
list=/var/list
irc=/run/ircd
gnats=/var/lib/gnats
nobody=/nonexistent
systemd-network=/run/systemd
systemd-resolve=/run/systemd
messagebus=/nonexistent
systemd-timesync=/run/systemd
syslog=/home/syslog
_apt=/nonexistent
tss=/var/lib/tpm
uuidd=/run/uuidd
systemd-oom=/run/systemd
tcpdump=/nonexistent
avahi-autoipd=/var/lib/avahi-autoipd
usbmux=/var/lib/usbmux
dnsmasq=/var/lib/misc
kernoops=/
avahi=/run/avahi-daemon
cups-pk-helper=/home/cups-pk-helper
rtkit=/proc
whoopsie=/nonexistent
sssd=/var/lib/sss
speech-dispatcher=/run/speech-dispatcher
fwupd-refresh=/run/systemd
nm-openvpn=/var/lib/openvpn/chroot
saned=/var/lib/saned
colord=/var/lib/colord
geoclue=/var/lib/geoclue
pulse=/run/pulse
gnome-initial-setup=/run/gnome-initial-setup/
hplip=/run/hplip
gdm=/var/lib/gdm3
jsamaan=/home/jsamaan
```

```
jsamaan@cis106:~$ cut -d ":" --complement -f3 /etc/passwd
root:x:0:root:/root:/bin/bash
daemon:x:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:bin:/bin:/usr/sbin/nologin
sys:x:3:sys:/dev:/usr/sbin/nologin
sync:x:65534:sync:/bin:/bin/sync
games:x:60:games:/usr/games:/usr/sbin/nologin
man:x:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:105::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
syslog:x:111::/home/syslog:/usr/sbin/nologin
_apt:x:65534::/nonexistent:/usr/sbin/nologin
tss:x:113:TPM software stack,,,:/var/lib/tpm:/bin/false
uuidd:x:116::/run/uuidd:/usr/sbin/nologin
systemd-oom:x:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
tcpdump:x:118::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
kernoops:x:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
cups-pk-helper:x:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
rtkit:x:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
whoopsie:x:124::/nonexistent:/bin/false
sssd:x:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
speech-dispatcher:x:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
fwupd-refresh:x:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
nm-openvpn:x:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
saned:x:129::/var/lib/saned:/usr/sbin/nologin
colord:x:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:131::/var/lib/geoclue:/usr/sbin/nologin
pulse:x:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:65534::/run/gnome-initial-setup/:/bin/false
hplip:x:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
jsamaan:x:1000:Joseph,,,:/home/jsamaan:/bin/bash
```

Question 3

```
jsamaan@cis106:~$ wc -l dracula.txt
wc: dracula.txt: No such file or directory
jsamaan@cis106:~$ wc -w prideandprejudice.txt
wc: prideandprejudice.txt: No such file or directory
jsamaan@cis106:~$ sort /etc/
Display all 243 possibilities? (y or n)
jsamaan@cis106:~$ sort /etc/passwd
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:110:119:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
avahi:x:114:121:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
colord:x:123:130:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
_flatpak:x:129:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
fwupd-refresh:x:120:126:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
games:x:5:60:games:/usr/games:/usr/sbin/nologin
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
geoclue:x:124:131::/var/lib/geoclue:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
jsamaan:x:1000:1000:Joseph,,,:/home/jsamaan:/bin/bash
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,://usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
messagebus:x:102:105::/nonexistent:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
nm-openvpn:x:121:127:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
root:x:0:0:root:/root:/bin/bash
rtkit:x:116:123:RealtimeKit,,,:/proc:/usr/sbin/nologin
saned:x:122:129::/var/lib/saned:/usr/sbin/nologin
speech-dispatcher:x:119:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
sssd:x:118:125:SSSD system user,,,:/var/lib/sss:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
syslog:x:104:111::/home/syslog:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-oom:x:108:117:systemd Userspace OOM Killer,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:103:106:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
```

Question 4

```
jsamaan@cis106:~$ cat cereal.csv | tr ';' ','
cat: cereal.csv: No such file or directory
jsamaan@cis106:~$ grep "love" pride-and-prejudice.txt
grep: pride-and-prejudice.txt: No such file or directory
jsamaan@cis106:~$ grep "love,hate" pride-and-prejudice.txt
grep: pride-and-prejudice.txt: No such file or directory
jsamaan@cis106:~$ grep -o 'love' pride-and-prejudice.txt
grep: pride-and-prejudice.txt: No such file or directory
jsamaan@cis106:~$ grep -E "[A-Z]^[0-9]" dracula.txt
grep: dracula.txt: No such file or directory
jsamaan@cis106:~$ 
```

Question 5

```
jsamaan@cis106:~$ awk -F';' {print $1,$NF}' cars.csv
> awk -F';' '{OFS=" made in "}{print $1,$NF}' cars.csv
>
awk -F';' '{print " The ", $1," has ",$3 " cylinders , " and is made in " ,$NF}'
 cars.csv
> awk 'NR'  > 3 {print}' cars.csv
> sed 's/Dracula/Alucard/g' dracula.txt
> sed G /etc/passwd
> sed '/$/d;G' pride-and-prejudice.txt
>
```

Question 6

```
jsamaan@cis106:~$ grep "/bin/bash" /etc/
Display all 243 possibilities? (y or n)
jsamaan@cis106:~$ grep "/bin/bash" /etc/passwd
root:x:0:0:root:/root:/bin/bash
jsamaan:x:1000:1000:Joseph,,,:/home/jsamaan:/bin/bash
jsamaan@cis106:~$ grep "/bin/bash" /etc/passwd | wc -l
2
jsamaan@cis106:~$ grep -c "/bin/bash" /etc/passwd
2
jsamaan@cis106:~$ grep -c "/sbin/nologin" /etc/passwd
40
jsamaan@cis106:~$ grep -i 'ford' cars.csv
grep: cars.csv: No such file or directory
jsamaan@cis106:~$ grep -o '\b[a-z]{4}\b' bible.txt | wc -l
grep: bible.txt: No such file or directory
0
jsamaan@cis106:~$
```

Challenge Question


```
jsamaan@cis106:~$ awk -F ';' 'NR > 3 {print $1}' cereal.csv
awk: cannot open cereal.csv (No such file or directory)
jsamaan@cis106:~$ awk -F ';' 'NR > 3 {print $1}' cereal.csv | sort
awk: cannot open cereal.csv (No such file or directory)
jsamaan@cis106:~$ cat cereal.csv | awk '{print $1, $2" calories"}'
cat: cereal.csv: No such file or directory
jsamaan@cis106:~$
```