Lab 7

Question 1

```
sgilmore@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
```

```
gilmore@cis106:~$ tac /etc/passwd
flatpak:x:129:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/
bin/nologin
boxadd:x:999:1::/var/run/vboxadd:/bin/false
wupd-refresh:x:128:136:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
gilmore:x:1000:1000:sgilmore,,,:/home/sgilmore:/bin/bash
dm:x:127:133:Gnome Display Manager:/var/lib/gdm3:/bin/false
plip:x:126:7:HPLIP system user,,,:/run/hplip:/bin/false
nome-initial-setup:x:125:65534::/run/gnome-initial-setup/:/bin/false
ulse:x:124:131:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
eoclue:x:123:130::/var/lib/geoclue:/usr/sbin/nologin
olord:x:122:129:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/no
ogin
aned:x:121:128::/var/lib/saned:/usr/sbin/nologin
```

```
sgilmore@cis106:~$ cat -En /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$
```

```
sgilmore@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
sgilmore@cis106:~$ tail -5 /etc/passwd
gdm:x:127:133:Gnome Display Manager:/var/lib/gdm3:/bin/false
sgilmore:x:1000:1000:sgilmore,,,:/home/sgilmore:/bin/bash
fwupd-refresh:x:128:136:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
vboxadd:x:999:1::/var/run/vboxadd:/bin/false
_flatpak:x:129:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr
sbin/nologin
```

Question 2

```
sgilmore@cis106:~$ cut -d ':' -f1 /etc/passwd
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
```

```
sgilmore@cis106:~$ cut -d ':' -f1,f7 /etc/passwd
cut: invalid field value 'f7'
Try 'cut --help' for more information.
sgilmore@cis106:~$ cut -d ':' -f1,7 /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
```

```
sgilmore@cis106:~$ cut -d ":" -f1,7 --output-delimiter=" = " /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
```

```
sgilmore@cis106:~$ cut -d ":" --complement -s -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
```

Question 3

```
sgilmore@cis106:~$ curl -s https://cis106.com/assets/shopping.txt -o shopping.t
t
sgilmore@cis106:~$ curl -s https://cis106.com/assets/tasks.txt -o tasks.txt
sgilmore@cis106:~$ paste shopping.txt tasks.txt
Eggs     Do laundry
Milk     Play Bingo
Juice    Go to Work
Carrots        Go to School
Potatoes       Pay Bills
```

```
sgilmore@cis106:~$ wc -l ~/Documents/Books/dracula.txt
15860 /home/sgilmore/Documents/Books/dracula.txt
sgilmore@cis106:~$ wc -w ~/Documents/Books/pride-and-prejudice.txt
130406 /home/sgilmore/Documents/Books/pride-and-prejudice.txt
sgilmore@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:122:129:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/no
login
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper
:/usr/sbin/nologin
```

Question 4

```
sgilmore@cis106:~/Documents/Csv$ cat cereal.csv | tr ';' ','
name,mfr,type,calories,protein,fat,sodium,fiber,carbo,sugars,potass,vitamins,she
lf,weight,cups,rating
String,Categorical,Categorical,Int,Int,Int,Int,Float,Float,Int,Int,Int,Int,Float
,Float,Float
100% Bran,N,C,70,4,1,130,10,5,6,280,25,3,1,0.33,68.402973
100% Natural Bran,Q,C,120,3,5,15,2,8,8,135,0,3,1,1,33.983679
All-Bran,K,C,70,4,1,260,9,7,5,320,25,3,1,0.33,59.425505
```

```
sgilmore@cis106:~/Documents/Books$ grep -i 'love' pride-and-prejudice.txt
by allowance" and "loving with personal love." This distinction applies
to their best work than in the case of those others who are loved "by
proper thing to love them. And in the sect--fairly large and yet
All the minor passages--the loves of Jane and Bingley, the advent of Mr.
aversion to actual love. I do not know whether the all-grasping hand of
his falling in love at all is not extremely probable. Here again I
injured in disposition, and thoroughly in love. As for his being in
love, Elizabeth has given as just an exposition of the causes of that
anybody who can read between lines will not find the lovers'
ladies with whom it might be a pleasure to fall in love; there are at
```

```
sgilmore@cis106:~/Documents/Books$ grep -wn 'love\|hate'  pride-and-prejudice
txt
98:by allowance" and "loving with personal love." This distinction applies
104:proper thing to love them. And in the sect--fairly large and yet
165:aversion to actual love. I do not know whether the all-grasping hand of
395:his falling in love at all is not extremely probable. Here again I
407:injured in disposition, and thoroughly in love. As for his being in
408:love, Elizabeth has given as just an exposition of the causes of that
469:ladies with whom it might be a pleasure to fall in love; there are at
473:Grant. I should have been most in love with Beatrix and Argemone; I
574:"So much love and eloquence"                                        156
755:_may_ fall in love with one of them, and therefore you must visit him as
932:for your sakes we would do anything. Lydia, my love, though you _are_
971:dancing was a certain step towards falling in love; and very lively
1047:"Come, Darcy," said he, "I must have you dance. I hate to see you
1414:way to be very much in love; but she considered with pleasure that it
1429:very few of us who have heart enough to be really in love without
```

```
sgilmore@cis106:~/Documents/Books$ grep -iw '^love' dracula.txt
love her. One, two, three, all open their veins for her, besides one old
love and pride, seen you grow up. Now I want you to make your home here
love me, and he loves me, and I love you with all the moods and tenses
love her. Oh, Madam Mina, by that love, I implore you, help me. It is
love and from the good, good wishes of those other strong men.
love Mina, I know. Oh, do something to save her. It cannot have gone too
```

```
sgilmore@cis106:~/Documents/Books$ grep '^[[:upper:]]\|^[[:digit:]]' dracula.txt
This eBook is for the use of anyone anywhere in the United States and
Title: Dracula
Author: Bram Stoker
Release Date: October, 1995 [eBook #345]
Language: English
Character set encoding: UTF-8
Produced by: Chuck Greif and the Online Distributed Proofreading Team
Contents
CHAPTER I. Jonathan Harker's Journal
CHAPTER II. Jonathan Harker's Journal
```

Question 5

```
sgilmore@cis106:~$ awk -F ';' '{print $1, $NF}' ~/Documents/Csv/cars.csv
Car Origin
STRING CAT
Chevrolet Chevelle Malibu US
Buick Skylark 320 US
Plymouth Satellite US
AMC Rebel SST US
Ford Torino US
```

```
sgilmore@cis106:~/Documents/Csv$ awk -F ';' '{print $1, " made in ", $NF}' cars.
csv
Car  made in  Origin
STRING  made in  CAT
Chevrolet Chevelle Malibu  made in  US
Buick Skylark 320  made in  US
Plymouth Satellite  made in  US
```

```
gilmore@cis106:~/Documents/Csv$ awk -F ';' '{print " The ",$1," has ",$3, " c
nders and is made in ",$NF}' cars.csv
The  Car  has  Cylinders  cylinders and is made in  Origin
The  STRING  has  INT  cylinders and is made in  CAT
The  Chevrolet Chevelle Malibu  has  8  cylinders and is made in  US
The  Buick Skylark 320  has  8  cylinders and is made in  US
The  Plymouth Satellite  has  8  cylinders and is made in  US
The  AMC Rebel SST  has  8  cylinders and is made in  US
```

```
sgilmore@cis106:~/Documents/Csv$ awk 'NR > 2 { print }' cars.csv
Chevrolet Chevelle Malibu;18.0;8;307.0;130.0;3504.;12.0;70;US
Buick Skylark 320;15.0;8;350.0;165.0;3693.;11.5;70;US
Plymouth Satellite;18.0;8;318.0;150.0;3436.;11.0;70;US
AMC Rebel SST;16.0;8;304.0;150.0;3433.;12.0;70;US
Ford Torino;17.0;8;302.0;140.0;3449.;10.5;70;US
Ford Galaxie 500;15.0;8;429.0;198.0;4341.;10.0;70;US
Chevrolet Impala;14.0;8;454.0;220.0;4354.;9.0;70;US
Plymouth Fury iii;14.0;8;440.0;215.0;4312.;8.5;70;US
Pontiac Catalina;14.0;8;455.0;225.0;4425.;10.0;70;US
```

```
sgilmore@cis106:~/Documents/Csv$ awk -F';' '{print toupper($1)}' cars.csv
CAR
STRING
CHEVROLET CHEVELLE MALIBU
BUICK SKYLARK 320
PLYMOUTH SATELLITE
AMC REBEL SST
FORD TORINO
FORD GALAXIE 500
```

```
sgilmore@cis106:~/Documents/Books$ sed 's/Dracula/Alucard/g' dracula.txt | grep
Alucard
The Project Gutenberg eBook of Alucard, by Bram Stoker
Title: Alucard
Castle Alucard, as there are no maps of this country as yet to compare
town named by Count Alucard, is a fairly well-known place. I shall enter
Count Alucard had directed me to go to the Golden Krone Hotel, which I
was all he knew. When I asked him if he knew Count Alucard, and could
"Count Alucard?" He bowed in a courtly way as he replied:--
"I am Alucard; and I bid you welcome, Mr. Harker, to my house. Come in;
Alucard, jumping to his feet, said:--
Alucard, as it may help me to understand. To-night he may talk of
the Turk on his own ground? This was a Alucard indeed! Woe was it that
```

```
sgilmore@cis106:~$ sed G /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
```

```
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Archive Foundation, how to help produce our new eBooks, and how to

subscribe to our email newsletter to hear about new eBooks.

sgilmore@cis106:~$ sed '/^$/d;G' ~/Documents/Books/pride-and-prejudice.txt
```
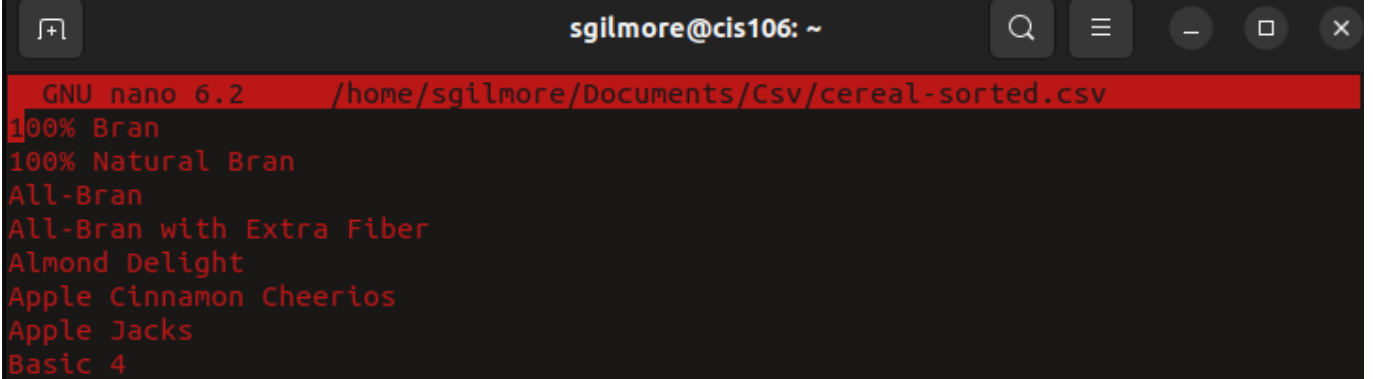
Question 6

```
sgilmore@cis106:~$ grep "/bin/bash" /etc/passwd
root:x:0:0:root:/root:/bin/bash
sgilmore:x:1000:1000:sgilmore,,,:/home/sgilmore:/bin/bash
sgilmore@cis106:~$ grep "/bin/bash" /etc/passwd | wc -l
2
sgilmore@cis106:~$ grep "/sbin/nologin" /etc/passwd | wc -l
40
```

```
sgilmore@cis106:~$ grep -i 'ford' ~/Documents/Csv/cars.csv | wc -l
53
sgilmore@cis106:~$ grep -Ewo '....' ~/Documents/Books/bible.txt | wc -l
263746
```

Challenge Question

```
sgilmore@cis106:~/Documents/Csv$ awk -F';' 'NR > 2 {print $1}' cereal.csv
100% Bran
100% Natural Bran
All-Bran
All-Bran with Extra Fiber
Almond Delight
Apple Cinnamon Cheerios                    7 / 7
Apple Jacks
```

```
sgilmore@cis106:~/Documents/Csv$ awk -F';' 'NR > 2 {print $1}' cereal.csv | sort
> cereal-sorted.csv
```

| ⊞ | sgilmore@cis106: ~ | 🔍 | ≡ | — | ☐ | ✕ |

```
  GNU nano 6.2       /home/sgilmore/Documents/Csv/cereal-sorted.csv
100% Bran
100% Natural Bran
All-Bran
All-Bran with Extra Fiber
Almond Delight
Apple Cinnamon Cheerios
Apple Jacks
Basic 4
```

```
sgilmore@cis106:~/Documents/Csv$ awk -F';' 'NR > 2 {print $1,$4}' cereal.csv
100% Bran 70
100% Natural Bran 120
All-Bran 70
All-Bran with Extra Fiber 50
Almond Delight 110
Apple Cinnamon Cheerios 110
Apple Jacks 110
Basic 4 130
```