Lab 7

Question 1 Cat, Tac, Head, Tail

```
jhopkinswalker@cis106vm:~$ 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
```

```
jhopkinswalker@cis106vm:~$ 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
jhopkinswalker:x:1000:1000:janyi,,,:/home/jhopkinswalker:/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
```

```
jhopkinswalker@cis106vm:~$ 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$
```

```
jhopkinswalker@cis106vm:~$ 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
jhopkinswalker@cis106vm:~$ 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
jhopkinswalker:x:1000:1000:janyi,,,:/home/jhopkinswalker:/bin/bash
vboxadd:x:999:1::/var/run/vboxadd:/bin/false
_flatpak:x:129:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/
sbin/nologin
```
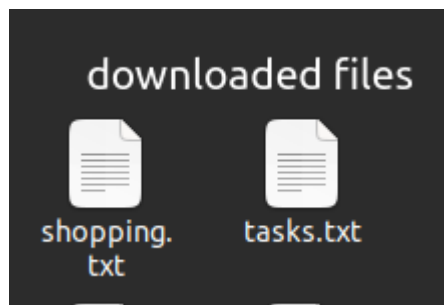
Question 2 Cut

```
jhopkinswalker@cis106vm:~$ cut -d ':' -f1 /etc/passwd
root
daemon
bin
sys
sync                                          2 / 15
games
man
lp
mail
news
uucp
```

```
jhopkinswalker@cis106vm:~$ 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
```

```
jhopkinswalker@cis106vm:~$ 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
uucp =/usr/sbin/nologin
proxy =/usr/sbin/nologin
```

```
jhopkinswalker@cis106vm:~$ 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
```

Question 3 Paste and Wc

downloaded files

shopping.txt   tasks.txt

```
jhopkinswalker@cis106vm:~$ wc -l Documents/Books/dracula.txt
15845 Documents/Books/dracula.txt
jhopkinswalker@cis106vm:~$ wc -w Documents/Books/pride-and-prejudice.txt
130412 Documents/Books/pride-and-prejudice.txt
```

Question 4 Tr and Grep

```
jhopkinswalker@cis106vm:~$ cd Documents/Csv/
jhopkinswalker@cis106vm:~/Documents/Csv$ ls
cars.csv  cereal.csv  contacts.csv  country.csv  film.csv
jhopkinswalker@cis106vm:~/Documents/Csv$ cat cereal.csv
name;mfr;type;calories;protein;fat;sodium;fiber;carbo;sugars;potass;vitamins;shelf;weight
;cups;rating
String;Categorical;Categorical;Int;Int;Int;Int;Float;Float;Int;Int;Int;Int;Float;Float;Fl
oat
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
All-Bran with Extra Fiber;K;C;50;4;0;140;14;8;0;330;25;3;1;0.5;93.704912
Almond Delight;R;C;110;2;2;200;1;14;8;-1;25;3;1;0.75;34.384843
Apple Cinnamon Cheerios;G;C;110;2;2;180;1.5;10.5;10;70;25;1;1;0.75;29.509541
Apple Jacks;K;C;110;2;0;125;1;11;14;30;25;2;1;1;33.174094
Basic 4;G;C;130;3;2;210;2;18;8;100;25;3;1.33;0.75;37.038562
Bran Chex;R;C;90;2;1;200;4;15;6;125;25;1;1;0.67;49.120253
Bran Flakes;P;C;90;3;0;210;5;13;5;190;25;3;1;0.67;53.313813
Cap'n'Crunch;Q;C;120;1;2;220;0;12;12;35;25;2;1;0.75;18.042851
```

```
jhopkinswalker@cis106vm:~/Documents/Csv$ cat cereal.csv | tr ';' ','
name,mfr,type,calories,protein,fat,sodium,fiber,carbo,sugars,potass,vitamins,shelf,weight
,cups,rating
String,Categorical,Categorical,Int,Int,Int,Int,Float,Float,Int,Int,Int,Int,Float,Float,Fl
oat
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
All-Bran with Extra Fiber,K,C,50,4,0,140,14,8,0,330,25,3,1,0.5,93.704912
Almond Delight,R,C,110,2,2,200,1,14,8,-1,25,3,1,0.75,34.384843
Apple Cinnamon Cheerios,G,C,110,2,2,180,1.5,10.5,10,70,25,1,1,0.75,29.509541
Apple Jacks,K,C,110,2,0,125,1,11,14,30,25,2,1,1,33.174094
Basic 4,G,C,130,3,2,210,2,18,8,100,25,3,1.33,0.75,37.038562
Bran Chex,R,C,90,2,1,200,4,15,6,125,25,1,1,0.67,49.120253
Bran Flakes,P,C,90,3,0,210,5,13,5,190,25,3,1,0.67,53.313813
Cap'n'Crunch,Q,C,120,1,2,220,0,12,12,35,25,2,1,0.75,18.042851
Cheerios,G,C,110,6,2,290,2,17,1,105,25,1,1,1.25,50.764999
Cinnamon Toast Crunch,G,C,120,1,3,210,0,13,9,45,25,2,1,0.75,19.823573
Clusters,G,C,110,3,2,140,2,13,7,105,25,3,1,0.5,40.400208
Cocoa Puffs,G,C,110,1,1,180,0,12,13,55,25,2,1,1,22.736446
```

```
jhopkinswalker@cis106vm:~/Documents/Books$ grep "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
Grant. I should have been most in love with Beatrix and Argemone; I
"So much love and eloquence"                                         156
_may_ fall in love with one of them, and therefore you must visit him as
persuade you at last. I was sure you loved your girls too well to
for your sakes we would do anything. Lydia, my love, though you _are_
dancing was a certain step towards falling in love; and very lively
way to be very much in love; but she considered with pleasure that it
very few of us who have heart enough to be really in love without
in love as much as she chooses."
```

```
jhopkinswalker@cis106vm:~/Documents$ grep -niE 'love|hate' Books/pride-and-prejudice.txt
99:by allowance" and "loving with personal love." This distinction applies
103:to their best work than in the case of those others who are loved "by
105:proper thing to love them. And in the sect--fairly large and yet
153:All the minor passages--the loves of Jane and Bingley, the advent of Mr.
166:aversion to actual love. I do not know whether the all-grasping hand of
396:his falling in love at all is not extremely probable. Here again I
408:injured in disposition, and thoroughly in love. As for his being in
409:love, Elizabeth has given as just an exposition of the causes of that
461:anybody who can read between lines will not find the lovers'
470:ladies with whom it might be a pleasure to fall in love; there were at
474:Grant. I should have been most in love with Beatrix and Argemone; I
575:"So much love and eloquence"                                        156
756:_may_ fall in love with one of them, and therefore you must visit him as
921:persuade you at last. I was sure you loved your girls too well to
933:for your sakes we would do anything. Lydia, my love, though you _are_
972:dancing was a certain step towards falling in love; and very lively
1048:"Come, Darcy," said he, "I must have you dance. I hate to see you
1415:way to be very much in love; but she considered with pleasure that it
1430:very few of us who have heart enough to be really in love without
1450:in love as much as she chooses."
1657:imagination is very rapid; it jumps from admiration to love, from love
```

```
jhopkinswalker@cis106vm:~/Documents/Books$ cd ../
jhopkinswalker@cis106vm:~/Documents$ grep -i '^love' Books/dracula.txt
loves you honestly, going away and looking all broken-hearted, and to
lover; it's more unselfish anyhow. My dear, I'm going to have a pretty
lover, such a husband, and such a friend.
lovelier than ever, and we drove up to the house at the Crescent in
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
loveliness had come back to her in death, and the hours that had passed,
loveliness. It frightened and amazed me somewhat; and as for Arthur, he
love her. Oh, Madam Mina, by that love, I implore you, help me. It is
lover, but only her physician and her friend. I gave to her my nights
loved and honoured as our host is, everything regarding him is of
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
loved him and honoured him more than I can say, and that my latest and
loved her, that they did dare much for her sake."
```

```
jhopkinswalker@cis106vm:~/Documents$ grep -n '^[A-Z]' Books/dracula.txt
3:This eBook is for the use of anyone anywhere in the United States and
11:Title: Dracula
13:Author: Bram Stoker
15:Release Date: October, 1995 [eBook #345]
18:Language: English
20:Produced by: Chuck Greif and the Online Distributed Proofreading Team
62:Contents
64:CHAPTER I. Jonathan Harker's Journal
65:CHAPTER II. Jonathan Harker's Journal
66:CHAPTER III. Jonathan Harker's Journal
67:CHAPTER IV. Jonathan Harker's Journal
68:CHAPTER V. Letters—Lucy and Mina
69:CHAPTER VI. Mina Murray's Journal
70:CHAPTER VII. Cutting from "The Dailygraph," 8 August
71:CHAPTER VIII. Mina Murray's Journal
72:CHAPTER IX. Mina Murray's Journal
73:CHAPTER X. Mina Murray's Journal
74:CHAPTER XI. Lucy Westenra's Diary
75:CHAPTER XII. Dr. Seward's Diary
```

```
jhopkinswalker@cis106vm:~/Documents$ grep -n '[0-9]' Books/dracula.txt
15:Release Date: October, 1995 [eBook #345]
16:[Most recently updated: November 12, 2023]
41:       Copyright, 1897, in the United States of America, according
70:CHAPTER VII. Cutting from "The Dailygraph," 8 August
118:_3 May. Bistritz._--Left Munich at 8:35 P. M., on 1st May, arriving at
119:Vienna early next morning; should have arrived at 6:46, but train was an
175:the station at 7:30 I had to sit in the carriage for more than an hour
210:a siege of three weeks and lost 13,000 people, the casualties of war
237:_4 May._--I found that my landlord had got a letter from the Count,
294:_5 May. The Castle._--The grey of the morning has passed, and the sun is
622:_5 May._--I must have been asleep, for certainly if I had been fully
804:_7 May._--It is again early morning, but I have rested and enjoyed the
1052:_8 May._--I began to fear as I wrote in this book that I was getting too
1240:_12 May._--Let me begin with facts--bare, meagre facts, verified by
1342:One of the letters was directed to Samuel F. Billington, No. 7, The
1420:_15 May._--Once more have I seen the Count go out in his lizard fashion.
1476:_Later: the Morning of 16 May._--God preserve my sanity, for to this I
1642:_18 May._--I have been down to look at that room again in daylight, for
1651:_19 May._--I am surely in the toils. Last night the Count asked me in
1673:"The first should be June 12, the second June 19, and the third June
1674:29."
```

Question 5 Awk and Sed

```
jhopkinswalker@cis106vm:~/Documents$ 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
Ford Galaxie 500 US
Chevrolet Impala US
Plymouth Fury iii US
Pontiac Catalina US
AMC Ambassador DPL US
Citroen DS-21 Pallas Europe
Chevrolet Chevelle Concours (sw) US
Ford Torino (sw) US
Plymouth Satellite (sw) US
AMC Rebel SST (sw) US
Dodge Challenger SE US
Plymouth 'Cuda 340 US
Ford Mustang Boss 302 US
Chevrolet Monte Carlo US
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F';' '{OFS=" Made in "} {print $1,$NF}' ~/Docum
ents/Csv/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
AMC Rebel SST Made in US
Ford Torino Made in US
Ford Galaxie 500 Made in US
Chevrolet Impala Made in US
Plymouth Fury iii Made in US
Pontiac Catalina Made in US
AMC Ambassador DPL Made in US
Citroen DS-21 Pallas Made in Europe
Chevrolet Chevelle Concours (sw) Made in US
Ford Torino (sw) Made in US
Plymouth Satellite (sw) Made in US
AMC Rebel SST (sw) Made in US
Dodge Challenger SE Made in US
Plymouth 'Cuda 340 Made in US
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F';' '{print "the " $1,"has",$3,"Cylinders and
is made in",$NF}' Csv/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
the Ford Torino has 8 Cylinders and is made in US
the Ford Galaxie 500 has 8 Cylinders and is made in US
the Chevrolet Impala has 8 Cylinders and is made in US
the Plymouth Fury iii has 8 Cylinders and is made in US
the Pontiac Catalina has 8 Cylinders and is made in US
the AMC Ambassador DPL has 8 Cylinders and is made in US
the Citroen DS-21 Pallas has 4 Cylinders and is made in Europe
the Chevrolet Chevelle Concours (sw) has 8 Cylinders and is made in US
the Ford Torino (sw) has 8 Cylinders and is made in US
the Plymouth Satellite (sw) has 8 Cylinders and is made in US
the AMC Rebel SST (sw) has 8 Cylinders and is made in US
the Dodge Challenger SE has 8 Cylinders and is made in US
the Plymouth 'Cuda 340 has 8 Cylinders and is made in US
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F';' 'NR > 3{print "the " $1,"has",$3,"Cylinder
s and is made in",$NF}' Csv/cars.csv
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
the Ford Torino has 8 Cylinders and is made in US
the Ford Galaxie 500 has 8 Cylinders and is made in US
the Chevrolet Impala has 8 Cylinders and is made in US
the Plymouth Fury iii has 8 Cylinders and is made in US
the Pontiac Catalina has 8 Cylinders and is made in US
the AMC Ambassador DPL has 8 Cylinders and is made in US
the Citroen DS-21 Pallas has 4 Cylinders and is made in Europe
the Chevrolet Chevelle Concours (sw) has 8 Cylinders and is made in US
the Ford Torino (sw) has 8 Cylinders and is made in US
the Plymouth Satellite (sw) has 8 Cylinders and is made in US
the AMC Rebel SST (sw) has 8 Cylinders and is made in US
the Dodge Challenger SE has 8 Cylinders and is made in US
the Plymouth 'Cuda 340 has 8 Cylinders and is made in US
the Ford Mustang Boss 302 has 8 Cylinders and is made in US
the Chevrolet Monte Carlo has 8 Cylinders and is made in US
the Buick Estate Wagon (sw) has 8 Cylinders and is made in US
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F: '{print toupper($1)}' Csv/cars.csv
CAR;MPG;CYLINDERS;DISPLACEMENT;HORSEPOWER;WEIGHT;ACCELERATION;MODEL;ORIGIN
STRING;DOUBLE;INT;DOUBLE;DOUBLE;DOUBLE;DOUBLE;INT;CAT
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
AMC AMBASSADOR DPL;15.0;8;390.0;190.0;3850.;8.5;70;US
CITROEN DS-21 PALLAS;0;4;133.0;115.0;3090.;17.5;70;EUROPE
CHEVROLET CHEVELLE CONCOURS (SW);0;8;350.0;165.0;4142.;11.5;70;US
FORD TORINO (SW);0;8;351.0;153.0;4034.;11.0;70;US
PLYMOUTH SATELLITE (SW);0;8;383.0;175.0;4166.;10.5;70;US
AMC REBEL SST (SW);0;8;360.0;175.0;3850.;11.0;70;US
DODGE CHALLENGER SE;15.0;8;383.0;170.0;3563.;10.0;70;US
PLYMOUTH 'CUDA 340;14.0;8;340.0;160.0;3609.;8.0;70;US
```

```
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subscribe to our email newsletter to hear about new eBooks.


jhopkinswalker@cis106vm:~/Documents$ sed 's/Dracula/Alucard/g' Books/dracula.txt _
```

```
jhopkinswalker@cis106vm:~/Documents$ sed '/ /{x;p;x}' /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
```

```
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jhopkinswalker@cis106vm:~/Documents$ sed 's/  / /g' Books/pride-and-prejudice.txt
```
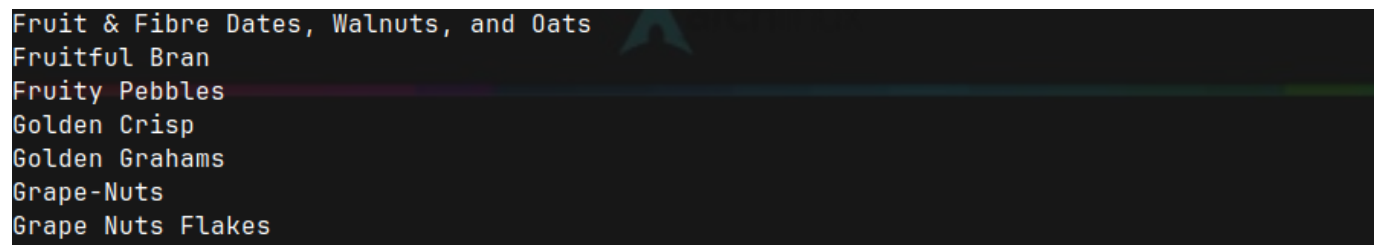
Question 6 I/O Redirection

```
jhopkinswalker@cis106vm:~/Documents$ grep "bin/bash" /etc/passwd
root:x:0:0:root:/root:/bin/bash
jhopkinswalker:x:1000:1000:janyi,,,:/home/jhopkinswalker:/bin/bash
jhopkinswalker@cis106vm:~/Documents$ grep "bin/bash" /etc/passwd | wc -l
2
jhopkinswalker@cis106vm:~/Documents$ grep "sbin/nologin" /etc/passwd | wc -l
40
jhopkinswalker@cis106vm:~/Documents$ grep -i "ford" Csv/cars.csv
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
Ford Torino (sw);0;8;351.0;153.0;4034.;11.0;70;US
Ford Mustang Boss 302;0;8;302.0;140.0;3353.;8.0;70;US
Ford Maverick;21.0;6;200.0;85.00;2587.;16.0;70;US
Ford F250;10.0;8;360.0;215.0;4615.;14.0;70;US
Ford Pinto;25.0;4;98.00;0;2046.;19.0;71;US
Ford Torino 500;19.0;6;250.0;88.00;3302.;15.5;71;US
Ford Galaxie 500;14.0;8;351.0;153.0;4154.;13.5;71;US
Ford Country Squire (sw);13.0;8;400.0;170.0;4746.;12.0;71;US
Ford Mustang;18.0;6;250.0;88.00;3139.;14.5;71;US
Ford Pinto Runabout;21.0;4;122.0;86.00;2226.;16.5;72;US
Ford Galaxie 500;14.0;8;351.0;153.0;4129.;13.0;72;US
Ford Gran Torino (sw);13.0;8;302.0;140.0;4294.;16.0;72;US
Ford Pinto (sw);22.0;4;122.0;86.00;2395.;16.0;72;US
Ford Gran Torino;14.0;8;302.0;137.0;4042.;14.5;73;US
Ford LTD;13.0;8;351.0;158.0;4363.;13.0;73;US
Ford Maverick;18.0;6;250.0;88.00;3021.;16.5;73;US
Ford Country;12.0;8;400.0;167.0;4906.;12.5;73;US
Ford Pinto;19.0;4;122.0;85.00;2310.;18.5;73;US
Ford Maverick;21.0;6;200.0;0;2875.;17.0;74;US
Ford Pinto;26.0;4;122.0;80.00;2451.;16.5;74;US
Ford Gran Torino;16.0;8;302.0;140.0;4141.;14.0;74;US
Ford Gran Torino (sw);14.0;8;302.0;140.0;4638.;16.0;74;US
Ford Maverick;15.0;6;250.0;72.00;3158.;19.5;75;US
Ford LTD;14.0;8;351.0;148.0;4657.;13.5;75;US
jhopkinswalker@cis106vm:~/Documents$ grep -i "ford" Csv/cars.csv | wc -l
53
jhopkinswalker@cis106vm:~/Documents$ cat Books/bible.txt | grep -Ei '*????*' Books/bible.
txt |wc -l
31102
jhopkinswalker@cis106vm:~/Documents$
```

Challenge Question

```
jhopkinswalker@cis106vm:~/Documents$ awk -F ';' 'NR > 3 {print $1}' Csv/cereal.csv
100% Natural Bran
All-Bran
All-Bran with Extra Fiber
Almond Delight
Apple Cinnamon Cheerios
Apple Jacks
Basic 4
Bran Chex
Bran Flakes
Cap'n'Crunch
Cheerios
Cinnamon Toast Crunch
Clusters
Cocoa Puffs
Corn Chex
Corn Flakes
Corn Pops
Count Chocula
Cracklin' Oat Bran
Cream of Wheat (Quick)
Crispix
Crispy Wheat & Raisins
Double Chex
Froot Loops
Frosted Flakes
Frosted Mini-Wheats
Fruit & Fibre Dates, Walnuts, and Oats
Fruitful Bran
Fruity Pebbles
Golden Crisp
Golden Grahams
Grape Nuts Flakes
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F ';' 'NR > 3 {print $1}' Csv/cereal.csv | sort
100% Natural Bran
All-Bran
All-Bran with Extra Fiber
Almond Delight
Apple Cinnamon Cheerios
Apple Jacks
Basic 4
Bran Chex
Bran Flakes
Cap'n'Crunch
Cheerios
Cinnamon Toast Crunch
Clusters
Cocoa Puffs
Corn Chex
Corn Flakes
Corn Pops
Count Chocula
Cracklin' Oat Bran
Cream of Wheat (Quick)
Crispix
Crispy Wheat & Raisins
Double Chex
Froot Loops
Frosted Flakes
Frosted Mini-Wheats
```

```
Fruit & Fibre Dates, Walnuts, and Oats
Fruitful Bran
Fruity Pebbles
Golden Crisp
Golden Grahams
Grape-Nuts
Grape Nuts Flakes
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F ';' 'NR > 3 {print $1,$4}' Csv/cereal.csv
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
Bran Chex 90
Bran Flakes 90
Cap'n'Crunch 120
Cheerios 110
Cinnamon Toast Crunch 120
Clusters 110
Cocoa Puffs 110
Corn Chex 110
Corn Flakes 100
Corn Pops 110
Count Chocula 110
Cracklin' Oat Bran 110
Cream of Wheat (Quick) 100
Crispix 110
Crispy Wheat & Raisins 100
Double Chex 100
Froot Loops 110
Frosted Flakes 110
Frosted Mini-Wheats 100
Fruit & Fibre Dates, Walnuts, and Oats 120
Fruitful Bran 120
Fruity Pebbles 110
Golden Crisp 100
Golden Grahams 110
Grape Nuts Flakes 100
Grape-Nuts 110
Great Grains Pecan 120
```

```
jhopkinswalker@cis106vm:~/Documents$ awk -F ';' 'NR > 3 {print $1,$4}' Csv/cereal.csv | t
r ';' ','
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
Bran Chex 90
Bran Flakes 90
Cap'n'Crunch 120
Cheerios 110
Cinnamon Toast Crunch 120
Clusters 110
Cocoa Puffs 110
Corn Chex 110
Corn Flakes 100
Corn Pops 110
Count Chocula 110
Cracklin' Oat Bran 110
Cream of Wheat (Quick) 100
Crispix 110
Crispy Wheat & Raisins 100
Double Chex 100
Froot Loops 110
Frosted Flakes 110
Frosted Mini-Wheats 100
Fruit & Fibre Dates, Walnuts, and Oats 120
Fruitful Bran 120
Fruity Pebbles 110
Golden Crisp 100
Golden Grahams 110
Grape Nuts Flakes 100
```

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