

AWK

1. Print all the First Names.

- In this question I want to find the first name of which is the start of every line, to do this I use `awk '{print $1}' AwkLab.data` \$1 is the first name in every line so that's what I want printed and then you want to have `AwkLab.data` at the end as it's the file we want to use.

```
miles@ubuntuserver:~$ awk '{ print $1 }' AwkLab.data
Samuel
Ponder
Angua
Susan
Tiffany
Sacharissa
Adora
Frodo
Tom
Peregrin
Samwise
A.A.
Antoine
Adalgrim
Bandobras
Belladonna
Eglantine
Mirabella
Ferumbas
Gerontius
miles@ubuntuserver:~$ _
```

2. Print phone numbers for Tom and Frodo after their names

- In this question I used `awk -v FS=: '/(Tom|Frodo)/{print $1 "\t" $2}' AwkLab.data` we are telling awk to use -v to assign a variable and FS: to find Tom and Frodo and then we use Tom|Frodo to tell it to print Tom and Frodo

```
miles@ubuntuserver:~$ awk -v FS=: '/(Tom|Frodo)/{print $1 "\t" $2}' AwkLab.data
Frodo Baggins (206) 548-1278
Tom Bombadil (916) 348-4278
miles@ubuntuserver:~$
```

3. Print Peregrin's full name and phone number area code only.

- For this question I used `awk '/Peregrin/{print $1,$2}' AwkLab.data` we want to use `/Peregrin/` for it to specifically be him then use `($1, $2)` to print the first name and then the phone numbers area code.

```
miles@ubuntu:~$ awk '/Peregrin/{print $1,$2}' AwkLab.data
Peregrin Took:(510)
miles@ubuntu:~$
```

- Print all phone numbers (full number) in the 123 area code along with the names
 - In this question I used `awk -F: '/^(123\)/{print $1, $2}' AwkLab.data` we use `F:` to give a better search and then use `^(123\)/` to search for the 123 area code then have it print `$1` and `$2` which will print the name and then the rest of the phone number after (123).

```
miles@ubuntu:~$ awk -F: '/^(123\)/{print $1, $2}' AwkLab.data
Antoine de Saint-Exupery (123) 978-6432
Belladonna Took (123) 978-5754
Eglantine Took (123) 978-3574
miles@ubuntu:~$
```

- Print all Last names beginning with either a T or D (careful of middle names!)
 - In this question I used `awk -F: '{print $1}' AwkLab.data | awk '{print $NF}' | awk -e '$1 ~ /[T] | [D]/ {print $1}'` we only want to print the last name so we have to use `print $1` so it can search every name in the file then we use `$NF` to grab the last sections of the lines we want instead of first names, then we can use `awk -e` and a regular expression `~` with `/[T] | [D]/` to print last names in that section that start with T and D.

```
miles@ubuntu:~$ awk -F: '{print $1}' AwkLab.data | awk '{print $NF}' | awk -e '$1 ~ /[T] | [D]/ {print $1}'
Dearheart
Took
Took
Took
Took
Took
Took
Took
Took
Took
Took
miles@ubuntu:~$
```

- Print all first names containing four or less characters.
 - In this question I used `awk '/^.{1,4}.*/{print $1}' AwkLab.data` I used `/^{1,4}.*/` and then `print $1` which will search for first names that are of the length of 1 through 4 the period at the end will search for names that have any character so it can print A.A.

```
miles@ubuntu:~$ awk '/^.{1,4} .*/{print $1}' AwkLab.data
Tom
A.A.
miles@ubuntu:~$
```

7. Print the first names and area codes of all those in the 916 area code.

- In this question I used `awk -F[:] ' /(916)/ {print $1, $3}' AwkLab.data` we want the area code of 916 and the corresponding first names so we want to use -F with brackets and a colon and then use `/ (916) /` to look at lines with 916 then we print \$1 and \$3 to print the first name and the area code.

```
miles@ubuntu:~$ awk -F[:] ' /(916)/ {print $1, $3}' AwkLab.data
Sacharissa (916)
Tom (916)
A.A. (916)
miles@ubuntu:~$ _
```

8. Print Sacharissa's campaign contributions following her name. Each value should be printed with a leading dollar sign; e.g., \$250 \$100 \$175.

- In this question I used `awk -F:` to make the search easier and then have the search be for Sacharissa with `/Sacharissa/` and then print her name and her contributions with \$1, \$3, \$4, \$5 and I used the "\$" to print a \$ before each section that is a contribution.

```
miles@ubuntu:~$ awk -F: '/Sacharissa/{print $1, "$"$3, "$"$4, "$"$5}' AwkLab.data
Sacharissa Cripslock $250 $100 $175
miles@ubuntu:~$
```

9. Print last names followed by a comma and the phone number. Be careful of the last names's format.

- In this question I used `awk -F:` again and then use `print $1` and a comma and then \$2 to print all lines in the file. Then I used pipe and used `awk` again with `NF` to use the end of the line to get the phone numbers, to do this I had subtract from `NF` so I can put the phone numbers in the position they are meant to be in.

```

miles@ubuntu:~$ awk -F: '{print $1 " ", $2}' AwkLab.data | awk '{print $(NF-2), $(NF-1), $NF}'
Vimes, (510) 548-1278
Stibbons, (408) 538-2358
Uberwald, (206) 654-6279
Helit, (206) 548-1348
Aching, (206) 548-1278
Cripslock, (916) 343-6410
Dearheart, (406) 298-7744
Baggins, (206) 548-1278
Bombadil, (916) 348-4278
Took, (510) 548-5258
Gamgee, (408) 926-3456
Milne, (916) 440-1763
Saint-Exupery, (123) 978-6432
Took, (345) 978-7684
Took, (453) 978-3534
Took, (123) 978-5754
Took, (123) 978-3574
Took, (345) 978-2677
Took, (563) 978-753
Took, (574) 978-8535
miles@ubuntu:~$

```

10. Print the first and last names of those who contributed more than \$110 in the last month. Make sure to include their last month contribution amount after the name

- In this question I used awk -F: again and used \$5 as the last month and used \$5 > 110 for it to search for contributions in section \$5 that are greater than 110 and then print all lines with \$1 and then the amount with \$5 with "\$" before the amount.

```

miles@ubuntu:~$ awk -F: '$5 > 110 {print $1, "$" $5}' AwkLab.data
Samuel Vimes $175
Ponder Stibbons $201
Susan Sto Helit $175
Tiffany Aching $150
Sacharissa Cripslock $175
Adora Belle Dearheart $275
Tom Bombadil $175
Peregrin Took $135
Samwise Gamgee $200
A.A. Milne $300
Antoine de Saint-Exupery $175
Adalgrim Took $467
Bandobras "Bullroarer" Took $4673
Belladonna Took $175
Eglantine Took $4367
Mirabella Took $175
Ferumbras III Took $3457
Gerontius Took $4562
miles@ubuntu:~$

```

11. Print the last names, phone numbers, and first month contribution of those who contributed less than \$150 in the first month.

- In this question I used awk -F: again and used \$3 as the first month and used \$3 < 150 for it to search for contributions in section \$3 that are less than 150 the \$1 to print all lines and then the amount with \$3

```
miles@ubuntu:~$ awk -F: '$3 < 150 {print $1, "$" $3}' AwkLab.data
Tiffany Aching $15
Peregrin Took $50
miles@ubuntu:~$ _
```

12. Print the first names and contribution of those who contributed between \$10 and \$200 in the first month.

- In this question used \$3 which is the first month then <= 200 and \$3 > 10 to search for lines where \$3 is between 10 and 200 and then used NF-2 to get rid of the last name and then added \$3 to just print the first name and contribution.

```
miles@ubuntu:~$ awk -F: '$3 > 10 && $3 <= 200 {print $1, "$" $3}' AwkLab.data | awk '{print $
(NF-2), ($3) }'
Ponder $155
Tiffany $15
Peregrin $50
A.A. $175
miles@ubuntu:~$
```

13. Print the first name, last names and total contributions of those who contributed less than \$700 over the three-month period.

- In this question I used awk -F: \$3+\$4+\$5 < 700 to search for lines that contributed less than 700 and then printed it out.

```
miles@ubuntu:~$ awk -F: '$3+$4+$5 < 700 {print $1, "$" $3+$4+$5}' AwkLab.data
Samuel Vimes $525
Ponder Stibbons $446
Angua von Überwald $360
Susan Sto Helit $525
Tiffany Aching $353
Sacharissa Cripslock $525
Frodo Baggins $405
Tom Bombadil $525
Peregrin Took $280
Samwise Gamgee $618
A.A. Milne $550
Antoine de Saint-Exupery $525
miles@ubuntu:~$
```

14. Print the first names and first letter of the last name, and average contribution of those who had an average contribution of more then \$300

- In this question I used $\$3+\$4+\$5/3$ to get the average and search for it and then printed it out.

```
miles@ubuntu:~$ awk -F: '$3+$4+$5/3 > 300 {print $1, "$" $3+$4+$5/3}' AwkLab.data
Samuel Vimes $408.333
Ponder Stibbons $312
Angua von Überwald $326.667
Susan Sto Helit $408.333
Sacharissa Cripslock $408.333
Adora Belle Dearheart $841.667
Frodo Baggins $355
Tom Bombadil $408.333
Samwise Gamgee $484.667
A.A. Milne $350
Antoine de Saint-Exupery $408.333
Adalgrim Took $4928.67
Bandobras "Bullroarer" Took $8678.67
Belladonna Took $661.333
Eglantine Took $2403.67
Mirabella Took $1404.33
Ferumbras III Took $1502.33
Gerontius Took $2733.67
miles@ubuntu:~$ _
```

15. Print the last name and area code of those not in the 916 area code.

- In this question I used `!(916)/` to search for lines without 916 and then printed `$1`, and `$2` and then I used `NF` to make it print the last name and the area code.

```
miles@ubuntu:~$ awk -F: '!(916)/ {print $1, $2}' AwkLab.data | awk '{print $(NF-2), $(NF-1)}'
Vimes (510)
Stibbons (408)
Überwald (206)
Helit (206)
Aching (206)
Dearheart (406)
Baggins (206)
Took (510)
Gamgee (408)
Saint-Exupery (123)
Took (345)
Took (453)
Took (123)
Took (123)
Took (345)
Took (563)
Took (574)
miles@ubuntu:~$ _
```

16. Print each record preceded by the number of the record.

- In this question I used `NR` which prints the record and then `$1`, `$2`, `$3`

```
miles@ubuntuuserver:~$ awk '{print NR, $1, $2, $3}' AwkLab.data
1 Samuel Vimes:(510) 548-1278:250:100:175
2 Ponder Stibbons:(408) 538-2358:155:90:201
3 Angua von Überwald:(206)
4 Susan Sto Helit:(206)
5 Tiffany Aching:(206) 548-1278:15:188:150
6 Sacharissa Cripslock:(916) 343-6410:250:100:175
7 Adora Belle Dearheart:(406)
8 Frodo Baggins:(206) 548-1278:250:80:75
9 Tom Bombadil:(916) 348-4278:250:100:175
10 Peregrin Took:(510) 548-5258:50:95:135
11 Samwise Gamgee:(408) 926-3456:250:168:200
12 A.A. Milne:(916) 440-1763:175:75:300
13 Antoine de Saint-Exupery:(123)
14 Adalgrim Took:(345) 978-7684:4673:100:467
15 Bandobras "Bullroarer" Took:(453)
16 Belladonna Took:(123) 978-5754:356:247:175
17 Eglantine Took:(123) 978-3574:473:475:4367
18 Mirabella Took:(345) 978-2677:783:563:175
19 Ferumbras III Took:(563)
20 Gerontius Took:(574) 978-8535:535:678:4562
miles@ubuntuuserver:~$
```

17. Print the name and total contribution of each person.

- In this question I printed the names and then used $\$3+\$4+\$5$ to add up the total.

```
miles@ubuntuuserver:~$ awk -F: '{print $1, "$"($3+$4+$5)}' AwkLab.data
Samuel Vimes $525
Ponder Stibbons $446
Angua von Überwald $360
Susan Sto Helit $525
Tiffany Aching $353
Sacharissa Cripslock $525
Adora Belle Dearheart $1025
Frodo Baggins $405
Tom Bombadil $525
Peregrin Took $280
Samwise Gamgee $618
A.A. Milne $550
Antoine de Saint-Exupery $525
Adalgrim Took $5240
Bandobras "Bullroarer" Took $11794
Belladonna Took $778
Eglantine Took $5315
Mirabella Took $1521
Ferumbras III Took $3807
Gerontius Took $5775
miles@ubuntuuserver:~$ _
```

18. Add \$10 to Tiffany Aching's first contribution and print her full name and first contribution.

- In this question I used `/Tiffany Aching/` to only use lines with her name and then printed the line with `$1` and then used $\$3+10$ to add to 10 to the total

```
miles@ubuntu:~$ awk -F: '/Tiffany Aching/{print $1, "$"($3+10)}' AwkLab.data
Tiffany Aching $25
miles@ubuntu:~$ _
```

19. Change Samwise Gamgee's name to Sean Astin

- In this question I used '/Samwise Gamgee/' to search for lines with that name and then used \$1="Sean Astin" to change the name and then printed it out.

```
miles@ubuntu:~$ awk -F: '/Samwise Gamgee/{$1="Sean Astin"; print $0;}' AwkLab.data
Sean Astin (408) 926-3456 250 168 200
miles@ubuntu:~$ _
```

20.

References:

<https://linuxhint.com/awk-command-examples/>

https://www.gnu.org/software/gawk/manual/html_node/String-Functions.html