

1-words that contain lp in their etc/passwd

```
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
tomato@Tomato:~$ sed -n '/lp/p' /etc/passwd
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
cups-pk-helper:x:115:122:user for cups-pk-helper service,,,:/home/cups-pk-helper
:/usr/sbin/nologin
tomato@Tomato:~$
```

2- print all the lines except the third line

```
./usr/sbin/nologin
tomato@Tomato:~$ sed '3d' /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/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
```

3-print all the lines except the last line

```
tomato@Tomato:~$ sed '$d' /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
```

4-display /etc/passwd except lines with lp

```
tomato@Tomato:~$ sed '/lp/d' /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
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
```

5- substitute lp with my lp and print it

```
tomato@Tomato:~$ sed -n -e 's/lp/mylp/g' -e '/mylp/p' /etc/passwd
mylp:x:7:7:mylp:/var/spool/mylpd:/usr/sbin/nologin
cups-pk-hemylper:x:115:122:user for cups-pk-hemylper service,,,:/home/cups-pk-hemylper:/usr/sbin/nologin
tomato@Tomato:~$
```

AWK:

1-comment using awk

```
mylp:/usr/sbin/nologin
tomato@Tomato:~$ awk -F: '{print "Comment is:",$5;}' /etc/passwd
Comment is: root
Comment is: daemon
Comment is: bin
Comment is: sys
```

2- login full name and home dir

```
Comment is: tomato,,,
tomato@Tomato:~$ awk -F: '{print NR ;print "Login is:",$1; print "Comment is: ",
$5; print "home dir is: ",$6}' /etc/passwd
1
Login is: root
```

3-login and full name and uid of uid > 500

```
home dir is: /home/tomato
tomato@Tomato:~$ awk -F: '{if($4 >500){print "uid is:",$4; ;print "Login is:",$1
; print "Comment is: ",$5; print "home dir is: ",$6}}' /etc/passwd
uid is: 65534
Login is: sync
Comment is: sync
```

4-login full name and uid of exactly 500 uid

```
, print "Comment is: ",$5; print "home dir is: ",$6}}' /etc/passwd
tomato@Tomato:~$ awk -F: '{if($4==500){print "uid is:",$4; ;print "Login is:",$1
; print "Comment is: ",$5; print "home dir is: ",$6}}' /etc/passwd
tomato@Tomato:~$
```

5-from line 5 to 15

```
; print "Comment is: ", $5; print "home dir is: ", $6}}' /etc/passwd
tomato@Tomato:~$ awk -F: '{if(NR >= 5 && NR <=15){print $0;}}' /etc/passwd
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
tomato@Tomato:~$
```

## 6-lp to my lp

```
tomato@Tomato:~$ awk -F:lp '{if($0 ~ "lp"){for(i=1; i<=NF;i++){printf $i; printf "mylp"} print "\n"; }}' /etc/passwd
mylp:x:7:7:mylp:/var/spool/mylpd:/usr/sbin/nologinmylp

cups-pk-henylper:x:115:122:user for cups-pk-henylper service,,:/home/cups-pk-henylper:/usr/sbin/nologinmylp
tomato@Tomato:~$
```

## 7-all info about greatest uid

```
tomato@Tomato:~$ awk -F: 'BEGIN{max=0;maxinfo=""} {if($4 > max){ max=$4; maxinfo=$0}} END{print maxinfo;}' /etc/passwd
sync:x:4:65534:sync:/bin:/bin/sync
tomato@Tomato:~$
```

## 8-sum of all account ids

```
tomato@Tomato:~$ awk -F: 'BEGIN{sum=0;} {sum=sum+$4} END{print sum;}' /etc/passwd
397226
tomato@Tomato:~$
```

## BONUS:

### 1- sum of all accounts uid with the same group

```
tomato@Tomato:~$ sort -t: -k4 /etc/passwd | awk -F: 'BEGIN{gp=0;sum=0} {if($4 != gp){print "current group: ",gp,"of sum:",sum; sum = 0 ; gp=$4} sum=sum+$3} END{print "current group: ",gp,"of sum:",sum}'
current group: 0 of sum: 0
current group: 1000 of sum: 1000
current group: 102 of sum: 100
current group: 103 of sum: 101
current group: 105 of sum: 102
current group: 106 of sum: 103
current group: 10 of sum: 10
```

## 2-groups report

```
current group : 9 of sum: 9
tomato@Tomato:~$ cut -d: -f1,4 /etc/group | awk -F[,/] 'BEGIN{print "User Group Report"; print "-----"} {print "Current Group ", $1; for(i=2; i<= NF; i++) print "User: " $i }'
-----
Current Group root
User:
Current Group daemon
User:
Current Group bin
```

