

Using sed utility

1- Display the lines that contain the word "lp" in /etc/passwd file.

```
asmaa@asmaa:~$ sed -n '/lp/p' /etc/passwd
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
cups-pk-helper:x:112:114:user for cups-pk-helper service,,,:/nonexistent:/usr/sbin/nologin
asmaa@asmaa:~$
```

2- Display /etc/passwd file except the third line.

```
asmaa@asmaa:~$ 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
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
_apt:x:42:65534::/nonexistent:/usr/sbin/nologin
```

3- Display /etc/passwd file except the last line.

```
user1:x:1002:1002::/home/user1:/bin/bash
user2:x:1003:1003::/home/user2:/bin/bash
asmaa@asmaa:~$ 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
```

```

gnome-initial-setup:x:119:65534:./run/gnome-initial-setup:/bin/false
gdm:x:120:121:Gnome Display Manager:/var/lib/gdm3:/bin/false
nm-openvpn:x:121:122:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/
/nologin
asmaa:x:1000:1000:asmaa:/home/asmaa:/bin/bash
guitar:x:1001:1001:./home/guitar:/bin/bash
postfix:x:122:124:./var/spool/postfix:/usr/sbin/nologin
sshd:x:123:65534:./run/sshd:/usr/sbin/nologin
user1:x:1002:1002:./home/user1:/bin/bash
asmaa@asmaa:~$

```

4- Display /etc/passwd file except the lines that contain the word “lp”.

```

asmaa@asmaa:~$ 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
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

```

5- Substitute all the words that contain “lp” with “mylp” in /etc/passwd file.

```

asmaa@asmaa:~$ sed -E 's/\b\w*lp\w*\b/mylp/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
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
mylp:x:7:7:mylp:/var/spool/mylp:/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

```

Using awk utility

1- Print full name (comment) of all users in the system.

```
awk -F: '{
    print $5
}' /etc/passwd
```

```
asmaa@asmaa:~$ day1Script
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
Mailing List Manager
ircd
```

2- Print login, full name (comment) and home directory of all users.(Print each line preceded by a line number)

```
awk 'BEGIN { FS=":" }
     { print NR , $1 , $5 , $6 }
' /etc/passwd|
```

```
asmaa@asmaa:~$ day1Script
1 root root /root
2 daemon daemon /usr/sbin
3 bin bin /bin
4 sys sys /dev
5 sync sync /bin
6 games games /usr/games
7 man man /var/cache/man
8 lp lp /var/spool/lpd
9 mail mail /var/mail
10 news news /var/spool/news
11 uucp uucp /var/spool/uucp
12 proxy proxy /bin
13 www-data www-data /var/www
14 backup backup /var/backups
15 list Mailing List Manager /var/list
```

3- Print login, uid and full name (comment) of those uid is greater than 500

```
awk -F: '{
    if ($3 > 500) {
        print $1, $3, $5
    }
}' /etc/passwd|
```

```
asmaa@asmaa:~$ day1Script
nobody 65534 nobody
systemd-network 998 systemd Network Management
systemd-timesync 996 systemd Time Synchronization
systemd-resolve 991 systemd Resolver
systemd-oom 990 systemd Userspace OOM Killer
dnsmasq 999 dnsmasq
fwupd-refresh 989 Firmware update daemon
gnome-remote-desktop 988 GNOME Remote Desktop
polkitd 987 User for polkitd
asmaa 1000 asmaa
guitar 1001
user1 1002
user2 1003
asmaa@asmaa:~$
```

4- Print login, uid and full name (comment) of those uid is exactly 500

```
awk -F: '{
    if ($3 == 500) {
        print $1, $3, $5
    }
}' /etc/passwd
```

```
asmaa@asmaa:~$ day1Script
asmaa@asmaa:~$
```

5- Print line from 5 to 15 from /etc/passwd

```
awk -F: '{
    if (NR >= 5 && NR <= 15) {
        print $0
    }
}' /etc/passwd
```

```
asmaa@asmaa:~$ day1Script
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
asmaa@asmaa:~$
```

6- Change lp to mylp

```
awk -F: '{
    i=1;
    while(i<=NF){
        if($i=="lp"){
            $i="mylp";
        }
        i=i+1;
    }
    print $0;
}' /etc/passwd
```

```
asmaa@asmaa:~$ day1Script
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
mylp x 7 7 mylp /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
```

7- Print all information about greatest uid.

```
awk 'BEGIN{FS=":";max=0; line=""}
{
  if ($3 > max) {
    max = $3
    line = $0
  }
}|
END {print line}' /etc/passwd
```

```
asmaa@asmaa:~$ day1Script
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
asmaa@asmaa:~$
```

8- Get the sum of all accounts id's.

```
awk 'BEGIN{FS=":";sum=0}
{sum += $3}
END {print "sum=",sum}' /etc/passwd
```

```
asmaa@asmaa:~$ day1Script
sum= 80408
```