Using sed utility

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

```
eslam@eslam-Latitude-E7450: ~/iti new capital/bash/Day1
eslam@ITI:~/iti new capital/bash/Day1$ 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/sb
in/nologin
eslam@ITI:~/iti new capital/bash/Day1$ █
```
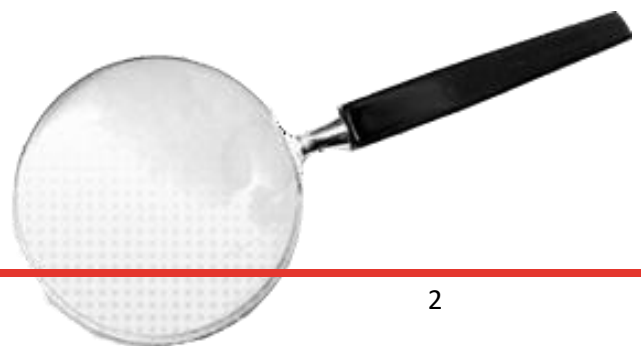
/etc/passwd file except the third line.

```
eslam@ITI:~/iti new capital/bash/Day1$ sed '3!p' /etc/passwd
root:x:0:0:root:/root:/bin/bash
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
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
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/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
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
```

ispl
ay
/etc
/pa
ssw
d
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exc
ept
the
last
line.

Bash Shell

```
eslam@ITI:~/iti new capital/bash/Day1$ sed -n '$!p' /etc/passwd | tail
cups-browsed:x:115:114::/nonexistent:/usr/sbin/nologin
hplip:x:116:7:HPLIP system user,,,:/run/hplip:/bin/false
polkitd:x:988:988:User for polkitd:/:/usr/sbin/nologin
rtkit:x:117:119:RealtimeKit,,,:/proc:/usr/sbin/nologin
colord:x:118:120:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/no
login
gnome-initial-setup:x:119:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:120:121:Gnome Display Manager:/var/lib/gdm3:/bin/false
nm-openvpn:x:121:122:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin
/nologin
nvidia-persistenced:x:122:124:NVIDIA Persistence Daemon,,,:/nonexistent:/usr/sbi
n/nologin
gnome-remote-desktop:x:985:985:GNOME Remote Desktop:/var/lib/gnome-remote-deskto
p:/usr/sbin/nologin
eslam@ITI:~/iti new capital/bash/Day1$
```

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

2

Bash Shell

```
eslam@ITI:~/iti new capital/bash/Day1$ sed -n '/lp/!p' /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
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
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:998:998:systemd Network Management:/:/usr/sbin/nologin
systemd-timesync:x:996:996:systemd Time Synchronization:/:/usr/sbin/nologin
dhcpcd:x:100:65534:DHCP Client Daemon,,,:/usr/lib/dhcpcd:/bin/false
messagebus:x:101:101::/nonexistent:/usr/sbin/nologin
syslog:x:102:102::/nonexistent:/usr/sbin/nologin
systemd-resolve:x:991:991:systemd Resolver:/:/usr/sbin/nologin
uuidd:x:103:103::/run/uuidd:/usr/sbin/nologin
```

ub stit ute all the wo rds tha t co nta in "lp " wit h "m ylp " in /et c/p asswd file.

```
eslam@ITI:~/iti new capital/bash/Day1$ sed -n 's/lp/mylp/gp' /etc/passwd
mylp:x:7:7:mylp:/var/spool/mylpd:/usr/sbin/nologin
cups-pk-hemylper:x:112:114:user for cups-pk-hemylper service,,,:/nonexistent:/us
r/sbin/nologin
eslam@ITI:~/iti new capital/bash/Day1$
```

Using awk utility

1- Print full name (comment) of all users in the system.
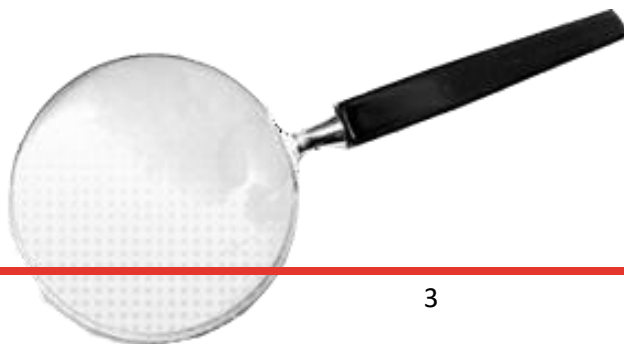
```
$ lap1
1   #! /usr/bin/bash
2
3   awk '
4   BEGIN{FS=":"}
5   {
6       print $5
7   }' /etc/passwd
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   ⋯   🐚 bash + ∨ ⬚ 🗑 ⋯ ∧ ✕

```
SSSD system user,,,
Speech Dispatcher,,,
user for cups-pk-helper service,,,
Firmware update daemon


HPLIP system user,,,
User for polkitd
RealtimeKit,,,
colord colour management daemon,,,

Gnome Display Manager
NetworkManager OpenVPN,,,
NVIDIA Persistence Daemon,,,
GNOME Remote Desktop
Eslam
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ 
```

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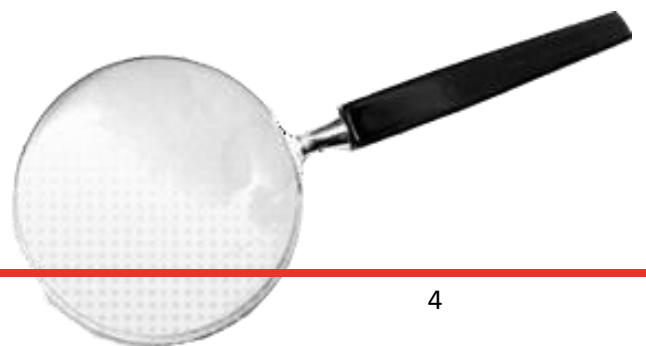
2- Print login, full name (comment) and home directory of all users.(Print each line preceded by a line number)

```
22
23    awk '
24    BEGIN{FS=":"}
25    {
26
27        print NR " " $1 ":" $3 ":" $6
28
29    }' /etc/passwd
30
31
32
33
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SQL CONSOLE

```
33 tcpdump:109:/nonexistent
34 sssd:110:/var/lib/sss
35 speech-dispatcher:111:/run/speech-dispatcher
36 cups-pk-helper:112:/nonexistent
37 fwupd-refresh:989:/var/lib/fwupd
38 saned:113:/var/lib/saned
39 geoclue:114:/var/lib/geoclue
40 cups-browsed:115:/nonexistent
41 hplip:116:/run/hplip
42 polkitd:988:/
43 rtkit:117:/proc
44 colord:118:/var/lib/colord
45 gnome-initial-setup:119:/run/gnome-initial-setup/
46 gdm:120:/var/lib/gdm3
47 nm-openvpn:121:/var/lib/openvpn/chroot
48 nvidia-persistenced:122:/nonexistent
49 gnome-remote-desktop:985:/var/lib/gnome-remote-desktop
50 eslam:1000:/home/eslam
○ eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ 
```

Bash Shell

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

$ lap1

```
11
12
13    awk '
14    BEGIN{FS=":"}
15    {
16        if($3>500){
17            print $1,$3,$5
18        }
19    }' /etc/passwd
20
21
22
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   ···   bash + ∨ ⊓ 🗑 ··· ∧ X

```
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ./lap1
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
polkitd 988 User for polkitd
gnome-remote-desktop 985 GNOME Remote Desktop
eslam 1000 Eslam
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$
```

Bash Shell

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

```
36
37
38     awk '
39     BEGIN{FS=":"}
40     {
41         if($3==500){
42
43             print $1 ":" $3 ":" $5
44
45         }
46
47     }' /etc/passwd
48
49
50
51
52
53
54
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SQL CONSOLE

```
● eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ./lap1
○ eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ▐
```

Bash Shell

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

```
50
51   awk '
52   {
53       if(NR>=5 && NR<=15){
54           print $0
55       }
56   }' /etc/passwd
57
58
59
60
61
62
63
64
65
66
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SQL CONSOLE

```
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ./lap1
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
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$
```

Bash Shell

6- Change lp to mylp

```
$ lap1
51    {
52        if(NR>=3 && NR<=15){
54        }
55    }' /etc/passwd
56
57    comment
58
59    awk '
60    BEGIN{FS=":"}
61    {
62        for(i=0;i<=7;i++){
63            if($i == "lp"){
64                $i = "mylp"
65
66            }
67        }
68        print $0
69    }' /etc/passwd
70
71
72
73
74
75
76
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SQL CONSOLE

```
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ./lap1
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
```

Bash Shell

```
72
73
74    awk '
75    BEGIN{FS=":";max=-1}
76    {
77        if($3>max){
78            max=$3
79            maxRow=$0
80        }
81    }END{print maxRow}' /etc/passwd
82
83
84
85
86
87
88
89
90
91
92
93
94
95
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SQL CONSOLE

```
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ./lap1
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$
```

8- G

Bash Shell

et the sum of all accounts id's.

```
82    comment
83
84    awk '
85    BEGIN{FS=":";sum=0}
86    {
87        sum += $3
88    }END{print "sum of all accounts id's = " sum}' /etc/passwd
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SQL CONSOLE

```
● eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ ./lap1
  sum of all accounts id's = 77277
○ eslam@eslam-Latitude-E7450:~/iti new capital/bash/Day1$ █
```

Bash Shell

Bonus

1. Get the sum of accounts id's that has the same group.

```awk
94    awk '
95    BEGIN{FS=":"}
96    {
97          #Dynamic Array with index = Group Number
98          sumID[$4] += $3
99
100   }END{for(g in sumID)
101   {
102         print "sum of accounts id's for Group no:" g" = "sumID[g]
103   }
104   }' /etc/passwd
105
106
107
108
109
110
111
112
113
114
115
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**   PORTS   SQL CONSOLE

```
sum of accounts id's for Group no:996 = 996
sum of accounts id's for Group no:988 = 988
sum of accounts id's for Group no:103 = 103
sum of accounts id's for Group no:2 = 2
sum of accounts id's for Group no:114 = 227
sum of accounts id's for Group no:1 = 1
sum of accounts id's for Group no:998 = 998
sum of accounts id's for Group no:117 = 114
sum of accounts id's for Group no:39 = 39
sum of accounts id's for Group no:105 = 105
sum of accounts id's for Group no:33 = 33
sum of accounts id's for Group no:989 = 989
sum of accounts id's for Group no:119 = 117
sum of accounts id's for Group no:12 = 6
sum of accounts id's for Group no:113 = 110
sum of accounts id's for Group no:120 = 118
sum of accounts id's for Group no:101 = 101
sum of accounts id's for Group no:0 = 0
sum of accounts id's for Group no:991 = 991
sum of accounts id's for Group no:116 = 113
sum of accounts id's for Group no:9 = 9
sum of accounts id's for Group no:7 = 123
```

Bash Shell