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```
======================================================================
=                            Bash Lab 1                              =
======================================================================
```
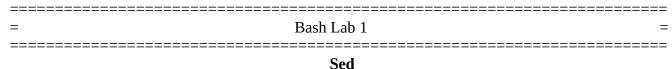
Sed

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

```
 sok  ~    12:39   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
_flatpak:x:130:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/
sbin/nologin

 sok  ~    12:39   sed  'lp' /etc/passwd
sed: -e expression #1, char 2: extra characters after command

 sok  ~    12:40
```

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

```
 sok  ~    12:43   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
```

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

```
sok:x:1000:1000:sok,,,:/home/sok:/bin/bash
nvidia-persistenced:x:129:137:NVIDIA Persistence Daemon,,,:/nonexistent:/usr/sbi
n/nologin
nvidia-persistenced:x:129:137:NVIDIA Persistence Daemon,,,:/nonexistent:/usr/sbi
n/nologin
_flatpak:x:130:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/
sbin/nologin
_flatpak:x:130:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/
sbin/nologin
postgres:x:131:139:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash

 sok  ~    12:44   sed '$ !p' /etc/passwd
```

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

```
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
sok:x:1000:1000:sok,,,:/home/sok:/bin/bash
nvidia-persistenced:x:129:137:NVIDIA Persistence Daemon,,,:/nonexistent:/usr/sbi
n/nologin
_flatpak:x:130:138:Flatpak system-wide installation helper,,,:/nonexistent:/usr/
sbin/nologin
postgres:x:131:139:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash

 sok    ~      12:46    sed -n '/lp/!p' /etc/passwd
```

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

```
pulse:x:125:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:126:65534::/run/gnome-initial-setup/:/bin/false
hplip:x:127:7:HPLIP system user,,,:/run/hplip:/bin/false
gdm:x:128:134:Gnome Display Manager:/var/lib/gdm3:/bin/false
sok:x:1000:1000:sok,,,:/home/sok:/bin/bash
nvidia-persistenced:x:129:137:NVIDIA Persistence Daemon,,,:/nonexistent:/usr/sbi
n/nologin
_flatpak:x:130:138:Flatpak system-wide installation hemylper,,,:/nonexistent:/us
r/sbin/nologin
postgres:x:131:139:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash

 sok    ~      13:02    sed 's/lp/mylp/g' /etc/passwd
```

Awk

```bash
#!/bin/bash
echo "==================Q1 Start=================="
awk -F : '{print $5}' /etc/passwd

echo "==================Q2 Start=================="

awk -F : '{print ">>" ,NR ," -Login:- ",$1," -Full name:- ",$5," -Home Dir:- ",$6}' /etc/passwd

echo "==================Q3 Start=================="

awk -F : '{
    if($3>500){
        print ">>" ,NR ," -Login:- ",$1," -UID:- ",$3," -Full name:- ",$5
    }
}' /etc/passwd

echo "==================Q4 Start=================="
awk -F : '{
    if($3==500){
        print ">>" ,NR ," -Login:- ",$1," -UID:- ",$3," -Full name:- ",$5
    }
}' /etc/passwd

echo "==================Q5 Start=================="
awk -F : '{
    if(NR >=5 && NR <=15 ){          You, 4 hours ago · bashlab1
        print ">>" ,NR , $0
    }
}' /etc/passwd

echo "==================Q6 Start=================="
awk ' BEGIN{
    FS=":";
    OFS="XX";
    }
        {
    for(i=1; i<=NF; i++){
    if($i == "lp"){
    $i="MYLP";
        }
    }
print $0
}' /etc/passwd
```

```bash
echo "=================Q7 Start==================="
awk 'BEGIN{
    FS=":";
    max=0
}
{
    if($3>max){
        max=$3
        maxinfo=$0
    }
} END{print "MaxInfo >>> " ,maxinfo} ' /etc/passwd

echo "=================Q8 Start==================="
awk 'BEGIN{
    FS=":";
    sum=0;
}
{        You, 4 hours ago • bashlab1
    sum=sum+$3;
}
END {print "SumOFUserIds= ", sum}' /etc/passwd
```