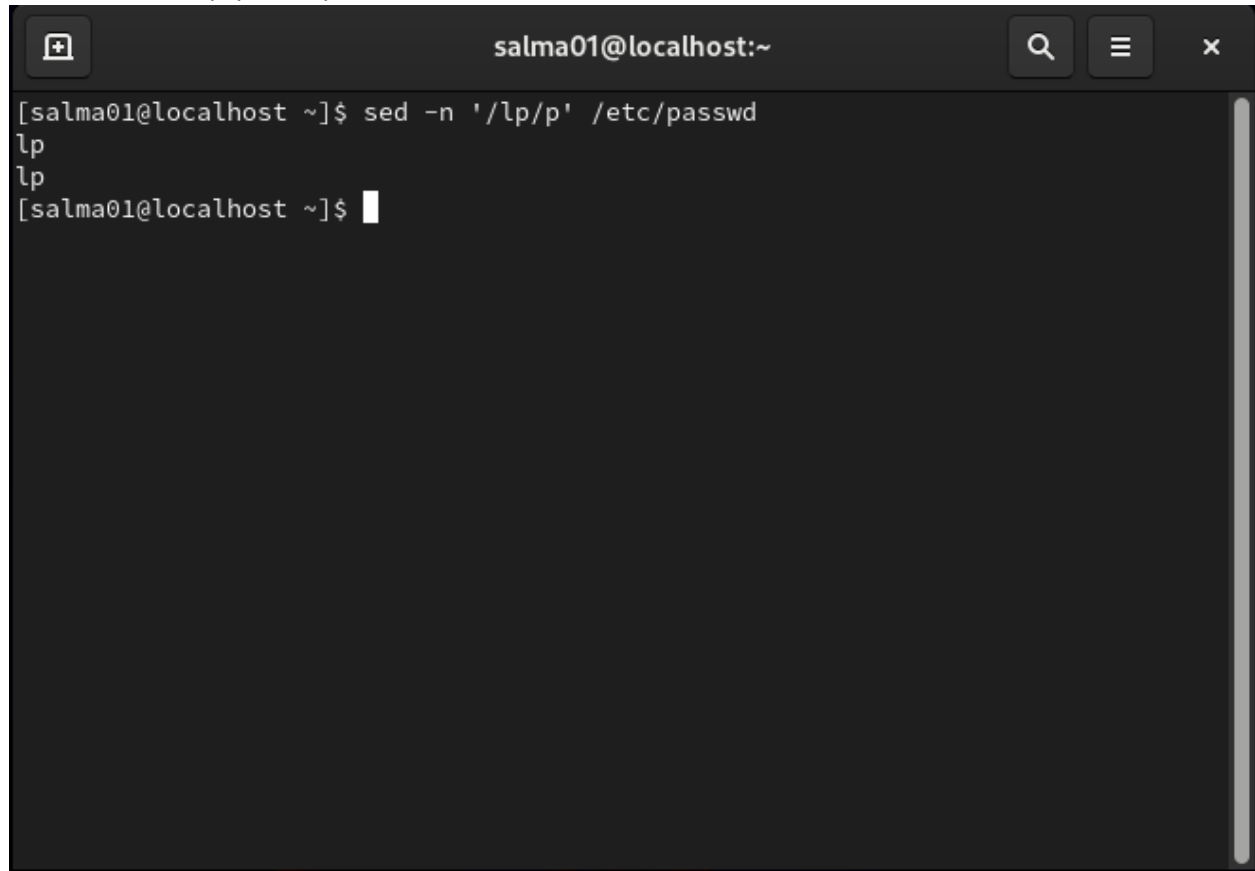


Using sed utility

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

```
sed -n '/lp/p' /etc/passwd
```

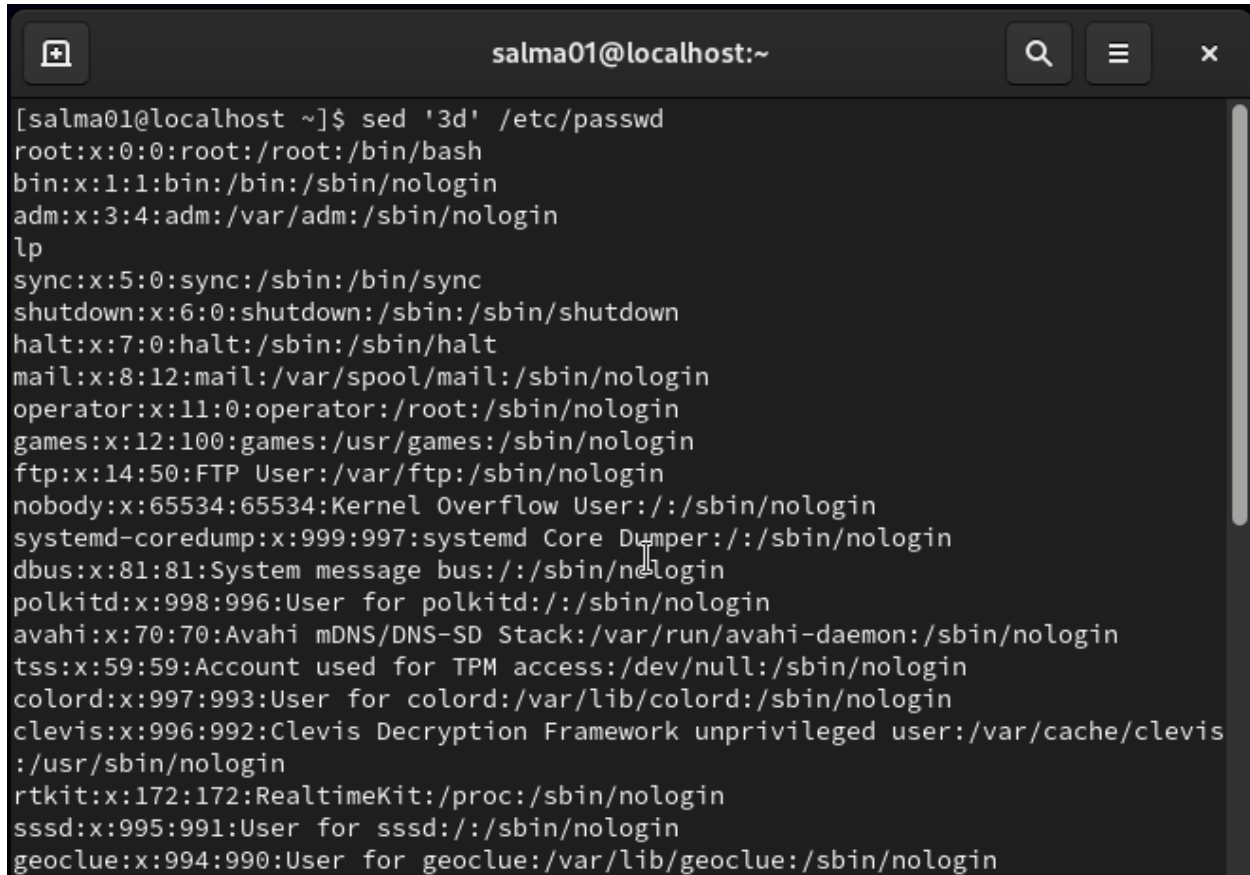


A terminal window titled "salma01@localhost:~" with search, menu, and close buttons in the title bar. The terminal shows the command `sed -n '/lp/p' /etc/passwd` being executed, which outputs two lines of "lp". The prompt `[salma01@localhost ~]$` is followed by a cursor.

```
[salma01@localhost ~]$ sed -n '/lp/p' /etc/passwd
lp
lp
[salma01@localhost ~]$
```

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

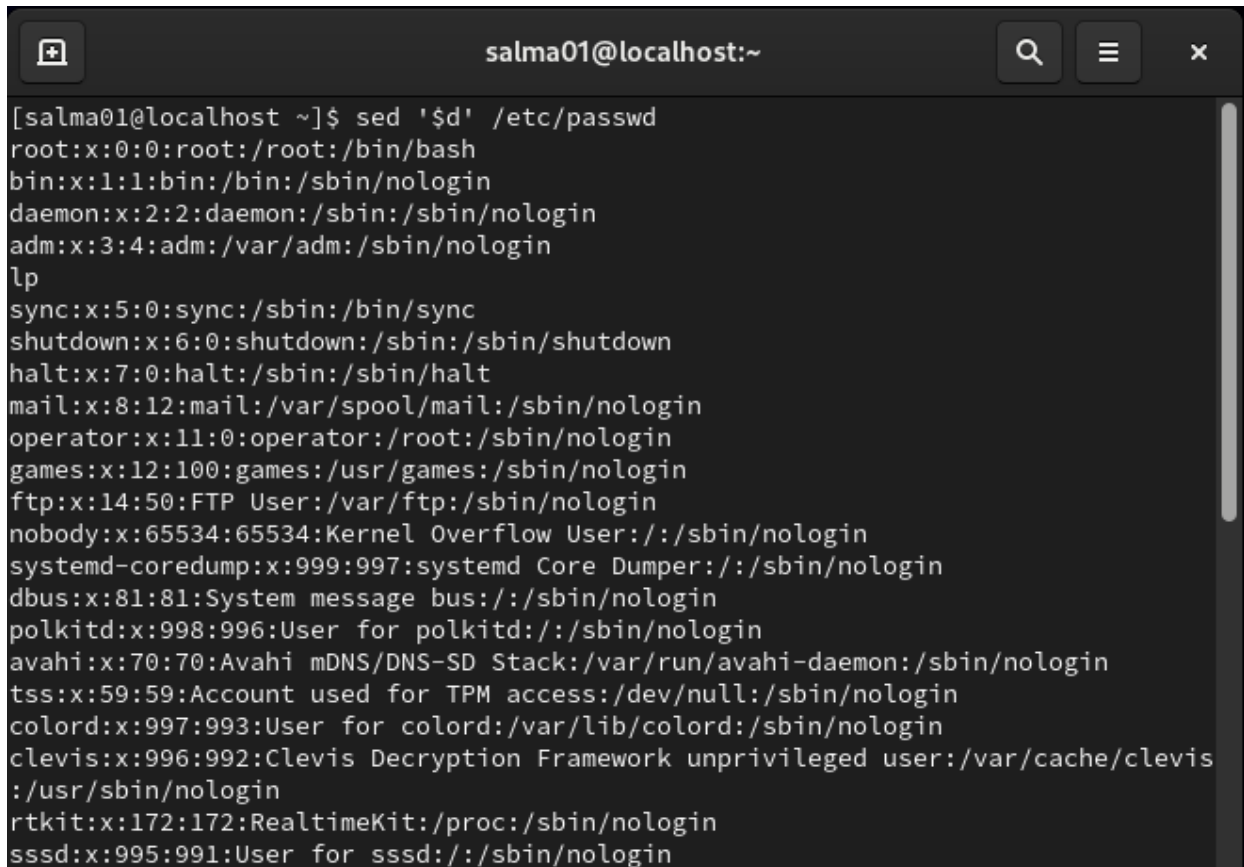
Sed '3d' /etc/passwd



```
salma01@localhost:~  
[salma01@localhost ~]$ sed '3d' /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
bin:x:1:1:bin:/bin:/sbin/nologin  
adm:x:3:4:adm:/var/adm:/sbin/nologin  
lp  
sync:x:5:0:sync:/sbin:/bin/sync  
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown  
halt:x:7:0:halt:/sbin:/sbin/halt  
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin  
operator:x:11:0:operator:/root:/sbin/nologin  
games:x:12:100:games:/usr/games:/sbin/nologin  
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin  
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin  
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin  
dbus:x:81:81:System message bus:/:/sbin/nologin  
polkitd:x:998:996:User for polkitd:/:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin  
colord:x:997:993:User for colord:/var/lib/colord:/sbin/nologin  
clevis:x:996:992:Clevis Decryption Framework unprivileged user:/var/cache/clevis  
:/usr/sbin/nologin  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin  
geoclue:x:994:990:User for geoclue:/var/lib/geoclue:/sbin/nologin
```

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

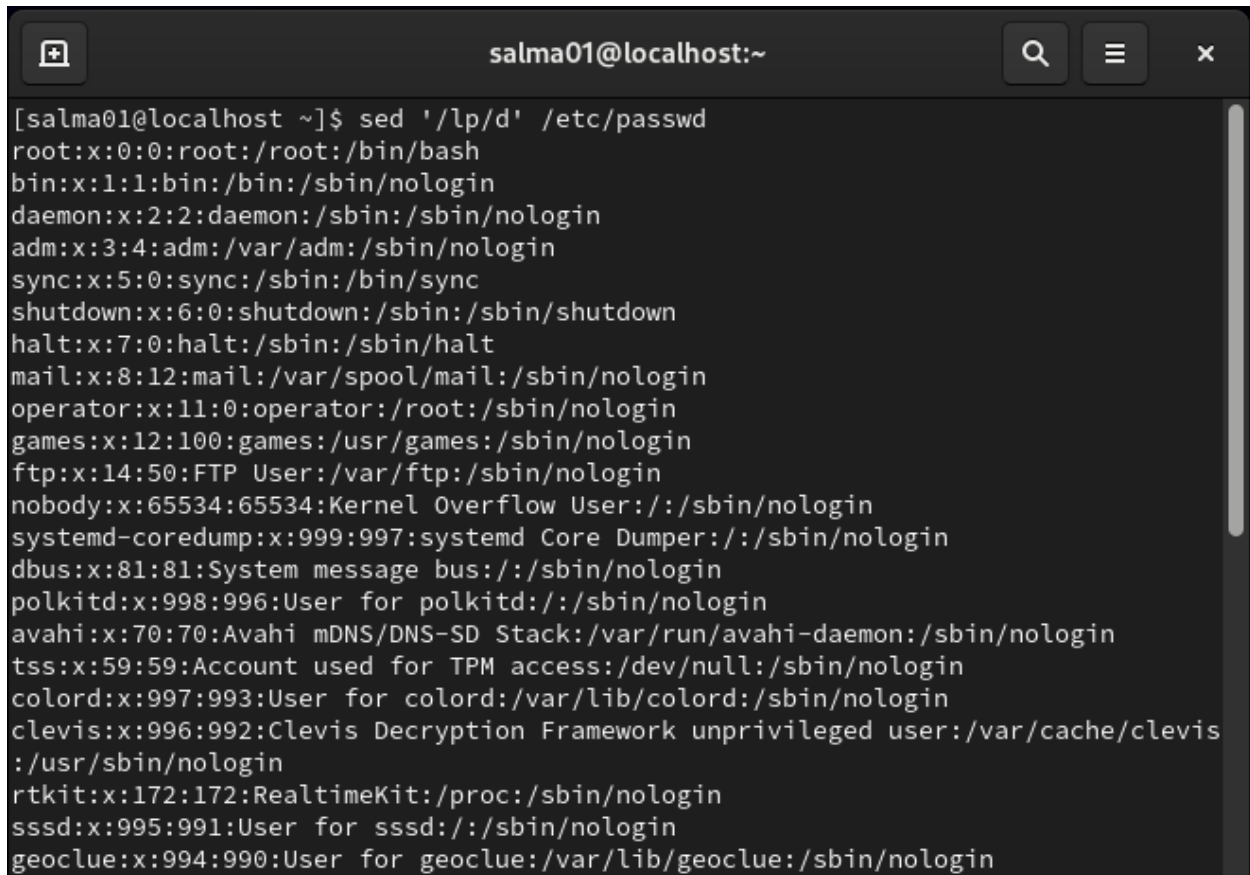
Sed '\$d' /etc/passwd



```
salma01@localhost:~  
[salma01@localhost ~]$ sed '$d' /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
bin:x:1:1:bin:/bin:/sbin/nologin  
daemon:x:2:2:daemon:/sbin:/sbin/nologin  
adm:x:3:4:adm:/var/adm:/sbin/nologin  
lp  
sync:x:5:0:sync:/sbin:/bin/sync  
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown  
halt:x:7:0:halt:/sbin:/sbin/halt  
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin  
operator:x:11:0:operator:/root:/sbin/nologin  
games:x:12:100:games:/usr/games:/sbin/nologin  
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin  
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin  
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin  
dbus:x:81:81:System message bus:/:/sbin/nologin  
polkitd:x:998:996:User for polkitd:/:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin  
colord:x:997:993:User for colord:/var/lib/colord:/sbin/nologin  
clevis:x:996:992:Clevis Decryption Framework unprivileged user:/var/cache/clevis  
:/usr/sbin/nologin  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin
```

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

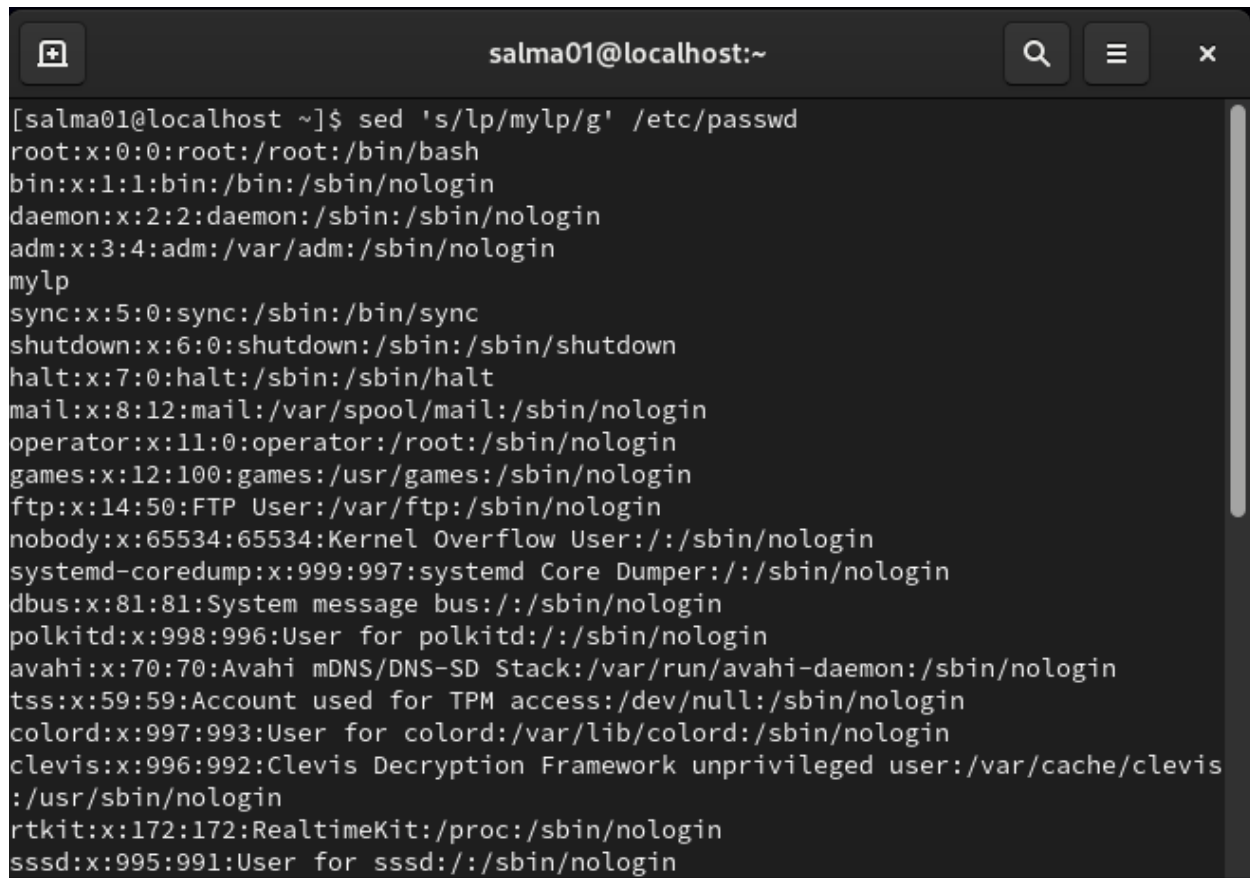
Sed '/lp/d' /etc/passwd



```
salma01@localhost:~  
[salma01@localhost ~]$ sed '/lp/d' /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
bin:x:1:1:bin:/bin:/sbin/nologin  
daemon:x:2:2:daemon:/sbin:/sbin/nologin  
adm:x:3:4:adm:/var/adm:/sbin/nologin  
sync:x:5:0:sync:/sbin:/bin/sync  
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown  
halt:x:7:0:halt:/sbin:/sbin/halt  
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin  
operator:x:11:0:operator:/root:/sbin/nologin  
games:x:12:100:games:/usr/games:/sbin/nologin  
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin  
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin  
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin  
dbus:x:81:81:System message bus:/:/sbin/nologin  
polkitd:x:998:996:User for polkitd:/:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin  
colord:x:997:993:User for colord:/var/lib/colord:/sbin/nologin  
clevis:x:996:992:Clevis Decryption Framework unprivileged user:/var/cache/clevis  
:/usr/sbin/nologin  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin  
geoclue:x:994:990:User for geoclue:/var/lib/geoclue:/sbin/nologin
```

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

Sed 's/lp/mylp/g' /etc/passwd

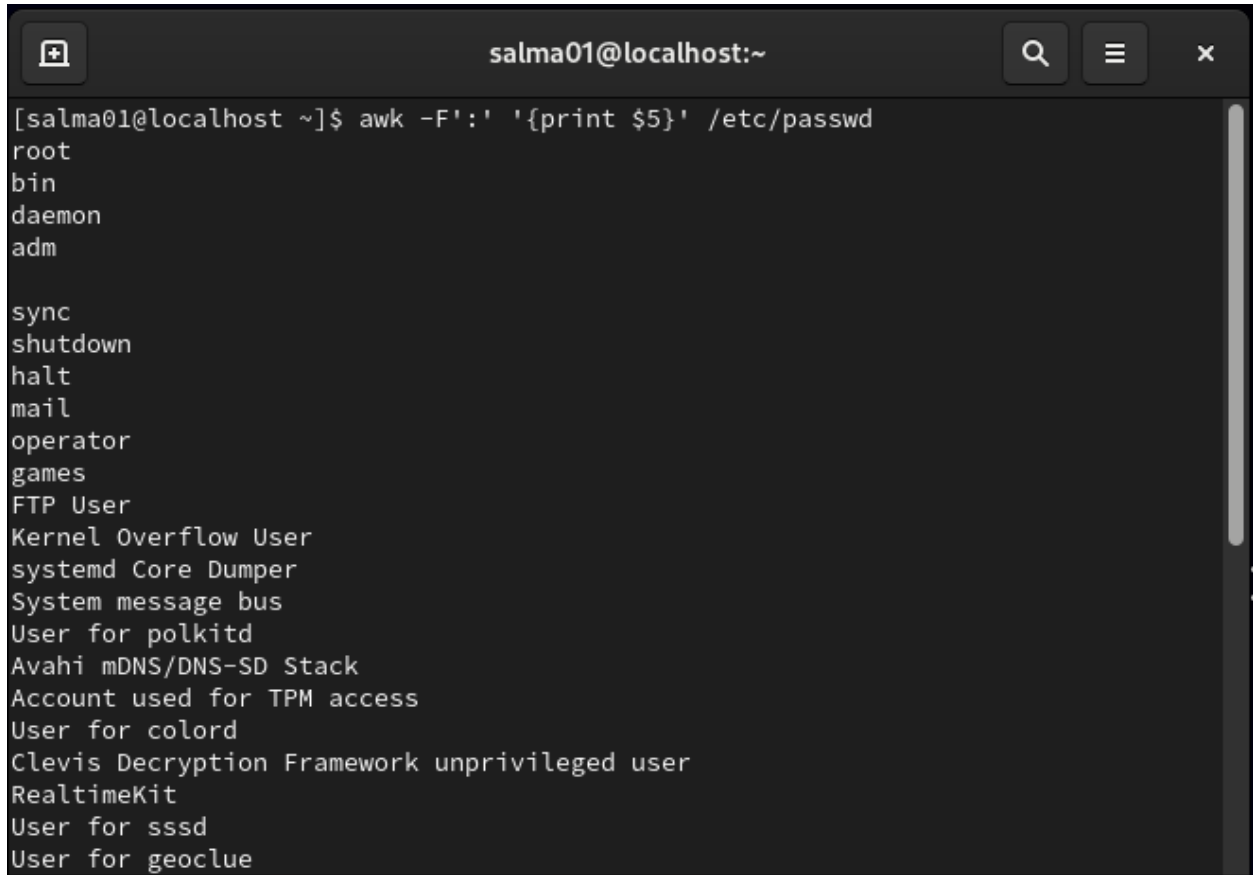


```
salma01@localhost:~  
[salma01@localhost ~]$ sed 's/lp/mylp/g' /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
bin:x:1:1:bin:/bin:/sbin/nologin  
daemon:x:2:2:daemon:/sbin:/sbin/nologin  
adm:x:3:4:adm:/var/adm:/sbin/nologin  
mylp  
sync:x:5:0:sync:/sbin:/bin/sync  
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown  
halt:x:7:0:halt:/sbin:/sbin/halt  
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin  
operator:x:11:0:operator:/root:/sbin/nologin  
games:x:12:100:games:/usr/games:/sbin/nologin  
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin  
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin  
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin  
dbus:x:81:81:System message bus:/:/sbin/nologin  
polkitd:x:998:996:User for polkitd:/:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin  
colord:x:997:993:User for colord:/var/lib/colord:/sbin/nologin  
clevis:x:996:992:Clevis Decryption Framework unprivileged user:/var/cache/clevis  
:/usr/sbin/nologin  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin
```

Using awk utility

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

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

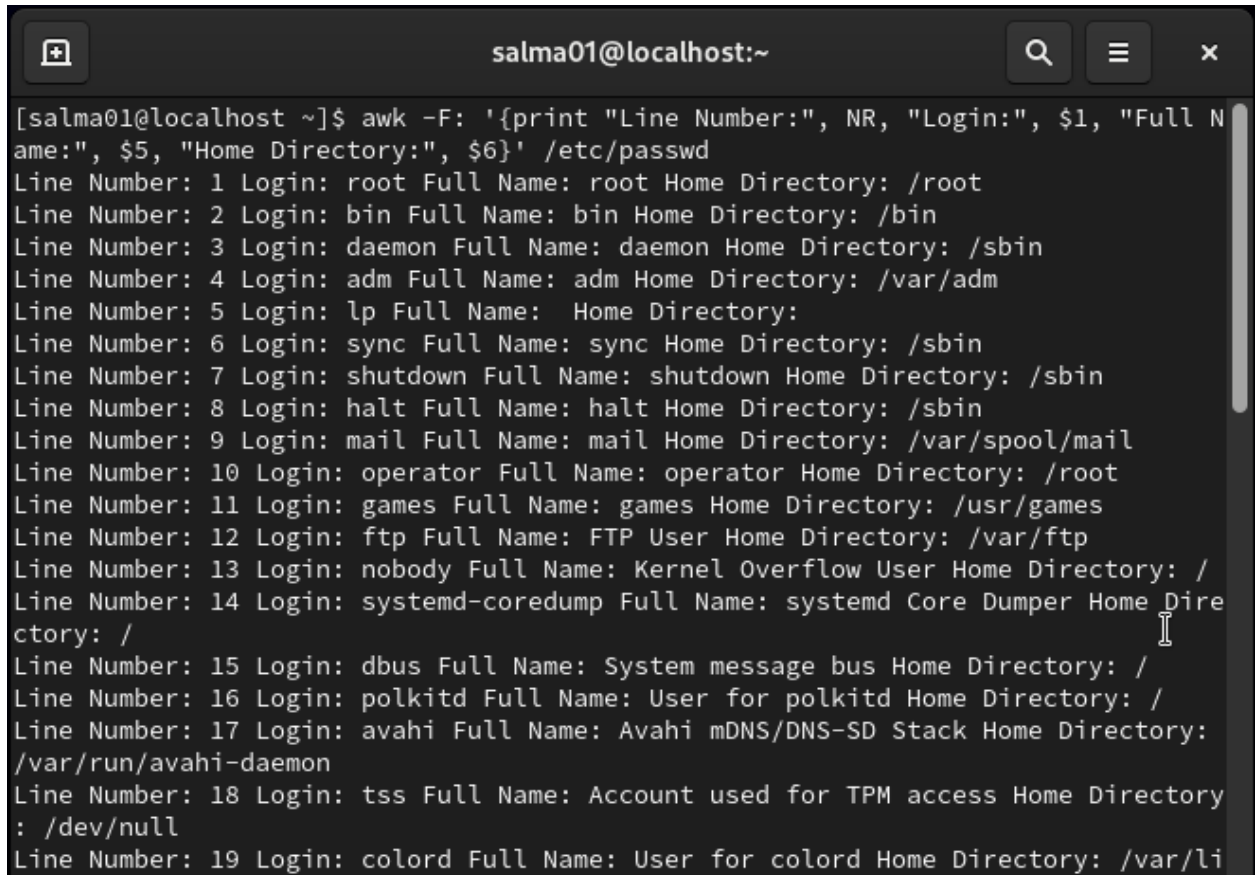
A terminal window titled 'salma01@localhost:~' with search, menu, and close icons in the title bar. The terminal shows the command `[salma01@localhost ~]$ awk -F':' '{print $5}' /etc/passwd` and its output, which lists the full names of system users from `/etc/passwd`. The output is as follows:

```
root
bin
daemon
adm

sync
shutdown
halt
mail
operator
games
FTP User
Kernel Overflow User
systemd Core Dumper
System message bus
User for polkitd
Avahi mDNS/DNS-SD Stack
Account used for TPM access
User for colord
Clevis Decryption Framework unprivileged user
RealtimeKit
User for sssd
User for geoclue
```

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

```
awk -F: '{print "Line Number:", NR, "Login:", $1, "Full Name:", $5, "Home Directory:", $6}'  
/etc/passwd
```

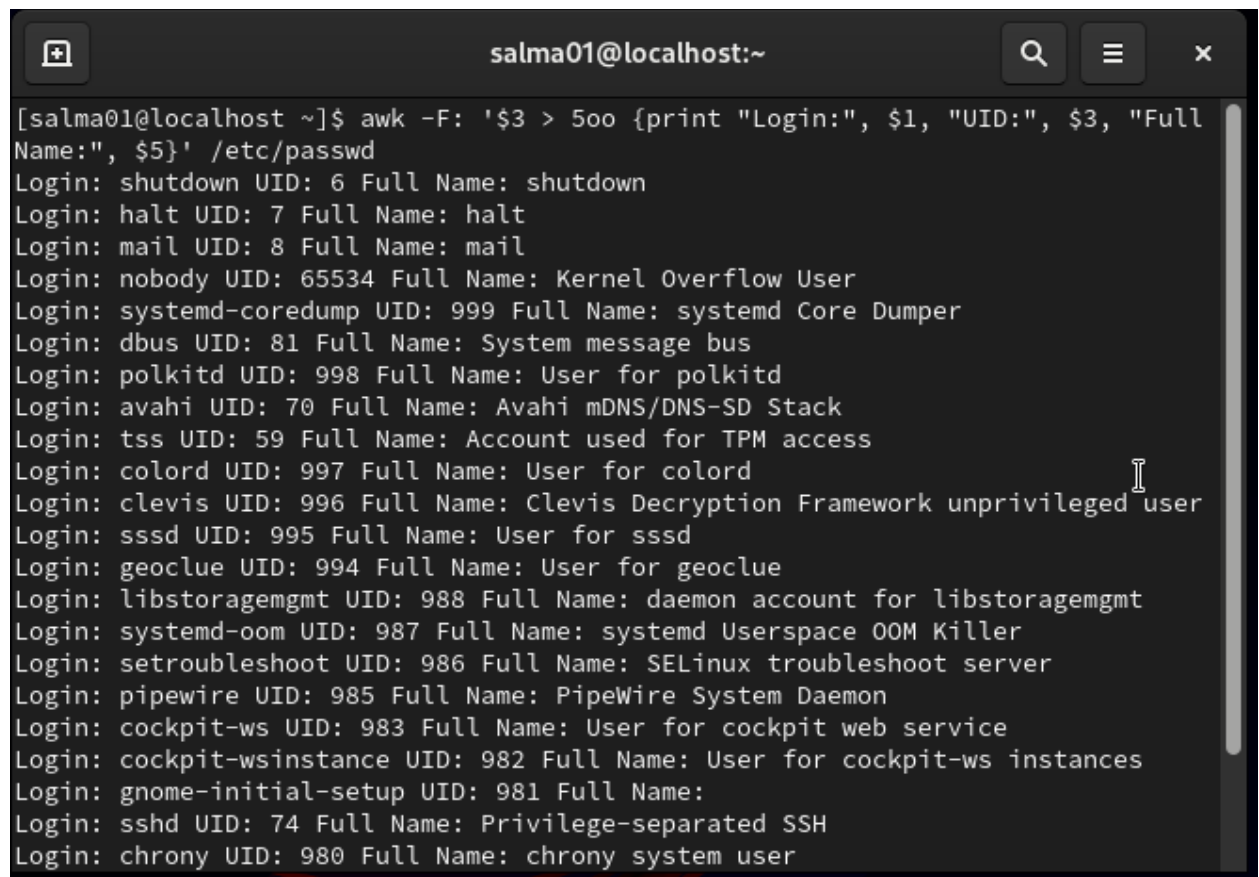


A terminal window titled 'salma01@localhost:~' with search, menu, and close icons in the title bar. The terminal shows the execution of an awk command to parse the /etc/passwd file. The output lists 19 system users, each with a line number, login name, full name, and home directory. The output is as follows:

```
[salma01@localhost ~]$ awk -F: '{print "Line Number:", NR, "Login:", $1, "Full Name:", $5, "Home Directory:", $6}' /etc/passwd  
Line Number: 1 Login: root Full Name: root Home Directory: /root  
Line Number: 2 Login: bin Full Name: bin Home Directory: /bin  
Line Number: 3 Login: daemon Full Name: daemon Home Directory: /sbin  
Line Number: 4 Login: adm Full Name: adm Home Directory: /var/adm  
Line Number: 5 Login: lp Full Name: Home Directory:  
Line Number: 6 Login: sync Full Name: sync Home Directory: /sbin  
Line Number: 7 Login: shutdown Full Name: shutdown Home Directory: /sbin  
Line Number: 8 Login: halt Full Name: halt Home Directory: /sbin  
Line Number: 9 Login: mail Full Name: mail Home Directory: /var/spool/mail  
Line Number: 10 Login: operator Full Name: operator Home Directory: /root  
Line Number: 11 Login: games Full Name: games Home Directory: /usr/games  
Line Number: 12 Login: ftp Full Name: FTP User Home Directory: /var/ftp  
Line Number: 13 Login: nobody Full Name: Kernel Overflow User Home Directory: /  
Line Number: 14 Login: systemd-coredump Full Name: systemd Core Dumper Home Directory: /  
Line Number: 15 Login: dbus Full Name: System message bus Home Directory: /  
Line Number: 16 Login: polkitd Full Name: User for polkitd Home Directory: /  
Line Number: 17 Login: avahi Full Name: Avahi mDNS/DNS-SD Stack Home Directory: /var/run/avahi-daemon  
Line Number: 18 Login: tss Full Name: Account used for TPM access Home Directory: /dev/null  
Line Number: 19 Login: colord Full Name: User for colord Home Directory: /var/li
```

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

```
awk -F: '$3 > 500 {print "Login:", $1, "UID:", $3, "Full Name:", $5}' /etc/passwd
```

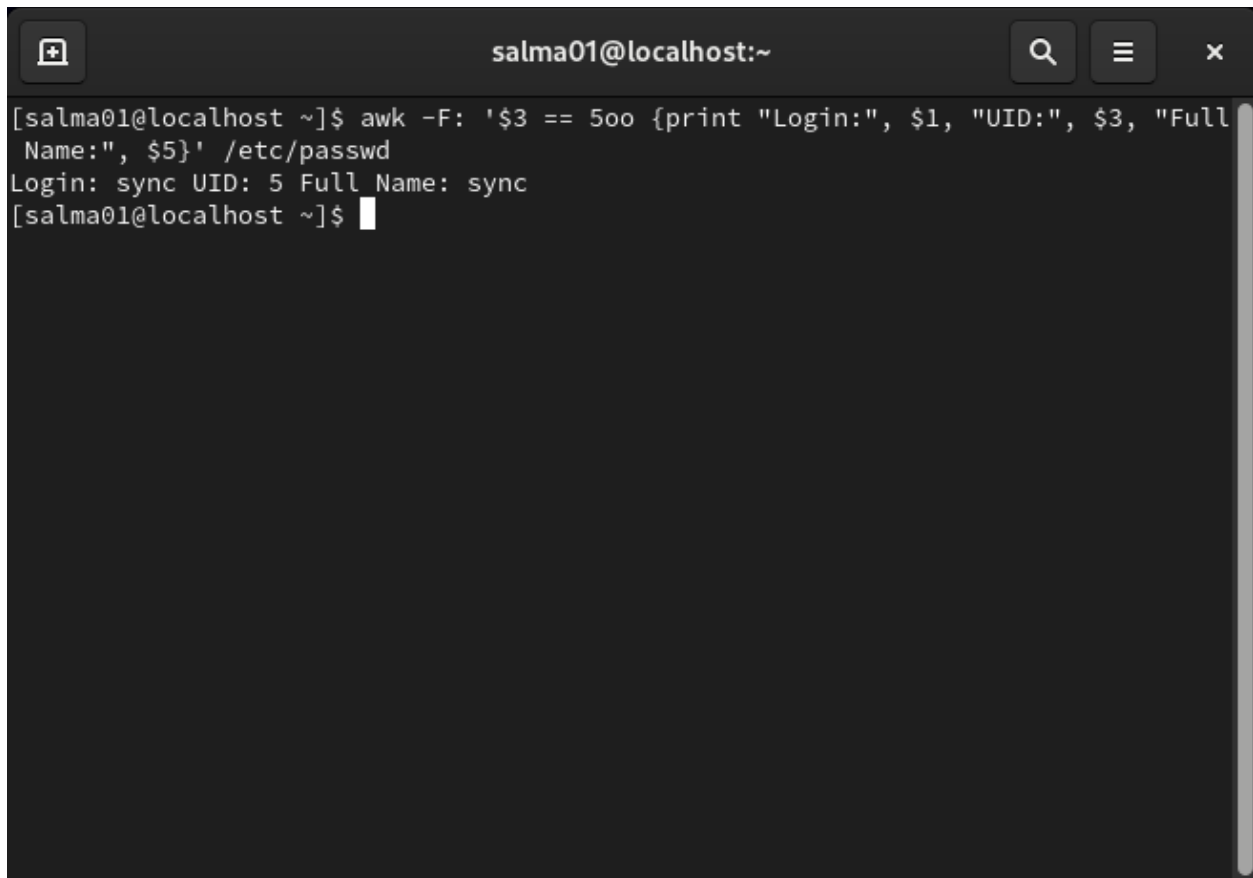


A terminal window titled "salma01@localhost:~" displays the output of the command `awk -F: '$3 > 500 {print "Login:", $1, "UID:", $3, "Full Name:", $5}' /etc/passwd`. The output lists system users with their login names, UIDs, and full names. The users listed are shutdown, halt, mail, nobody, systemd-coredump, dbus, polkitd, avahi, tss, colord, clevis, sssd, geoclue, libstoragemgmt, systemd-oom, setroubleshoot, pipewire, cockpit-ws, cockpit-wsinstance, gnome-initial-setup, sshd, and chrony. The UID for 'nobody' is 65534, and for 'systemd-coredump' it is 999. The full name for 'clevis' is 'Clevis Decryption Framework unprivileged user'.

```
[salma01@localhost ~]$ awk -F: '$3 > 500 {print "Login:", $1, "UID:", $3, "Full Name:", $5}' /etc/passwd
Login: shutdown UID: 6 Full Name: shutdown
Login: halt UID: 7 Full Name: halt
Login: mail UID: 8 Full Name: mail
Login: nobody UID: 65534 Full Name: Kernel Overflow User
Login: systemd-coredump UID: 999 Full Name: systemd Core Dumper
Login: dbus UID: 81 Full Name: System message bus
Login: polkitd UID: 998 Full Name: User for polkitd
Login: avahi UID: 70 Full Name: Avahi mDNS/DNS-SD Stack
Login: tss UID: 59 Full Name: Account used for TPM access
Login: colord UID: 997 Full Name: User for colord
Login: clevis UID: 996 Full Name: Clevis Decryption Framework unprivileged user
Login: sssd UID: 995 Full Name: User for sssd
Login: geoclue UID: 994 Full Name: User for geoclue
Login: libstoragemgmt UID: 988 Full Name: daemon account for libstoragemgmt
Login: systemd-oom UID: 987 Full Name: systemd Userspace OOM Killer
Login: setroubleshoot UID: 986 Full Name: SELinux troubleshoot server
Login: pipewire UID: 985 Full Name: PipeWire System Daemon
Login: cockpit-ws UID: 983 Full Name: User for cockpit web service
Login: cockpit-wsinstance UID: 982 Full Name: User for cockpit-ws instances
Login: gnome-initial-setup UID: 981 Full Name:
Login: sshd UID: 74 Full Name: Privilege-separated SSH
Login: chrony UID: 980 Full Name: chrony system user
```


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

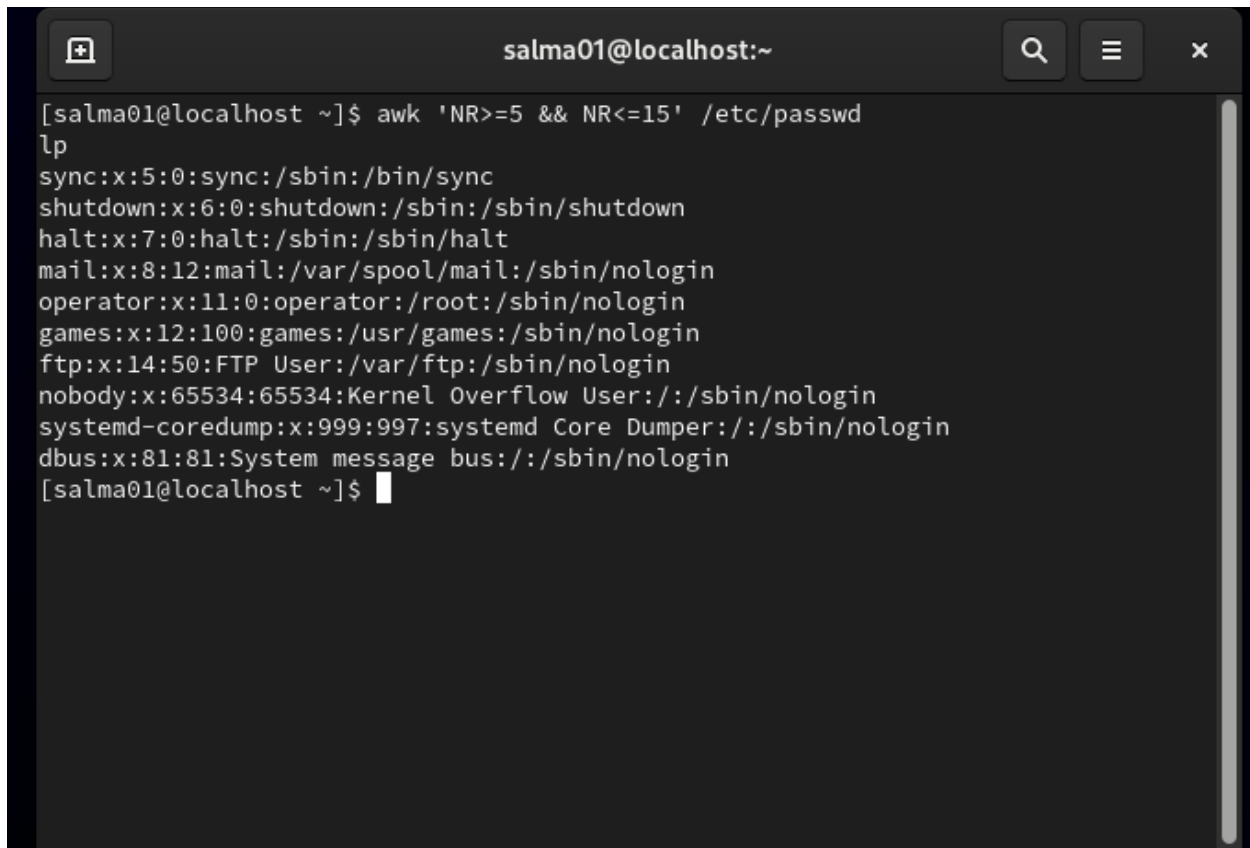
```
awk -F: '$3 == 500 {print "Login: " $1 " , UID: " $3 " , Full Name: " $5}' /etc/passwd
```



```
salma01@localhost:~  
[salma01@localhost ~]$ awk -F: '$3 == 500 {print "Login:", $1, "UID:", $3, "Full  
Name:", $5}' /etc/passwd  
Login: sync UID: 5 Full Name: sync  
[salma01@localhost ~]$
```

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

```
awk 'NR >= 5 && NR <= 15' /etc/passwd
```



A terminal window titled "salma01@localhost:~" with search, menu, and close buttons in the title bar. The terminal shows the command `awk 'NR>=5 && NR<=15' /etc/passwd` being executed. The output lists system users from line 5 to 15 of the `/etc/passwd` file. The cursor is at the end of the command line.

```
[salma01@localhost ~]$ awk 'NR>=5 && NR<=15' /etc/passwd
lp
sync:x:5:0:sync:/sbin:/bin/sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin
dbus:x:81:81:System message bus:/:/sbin/nologin
[salma01@localhost ~]$
```

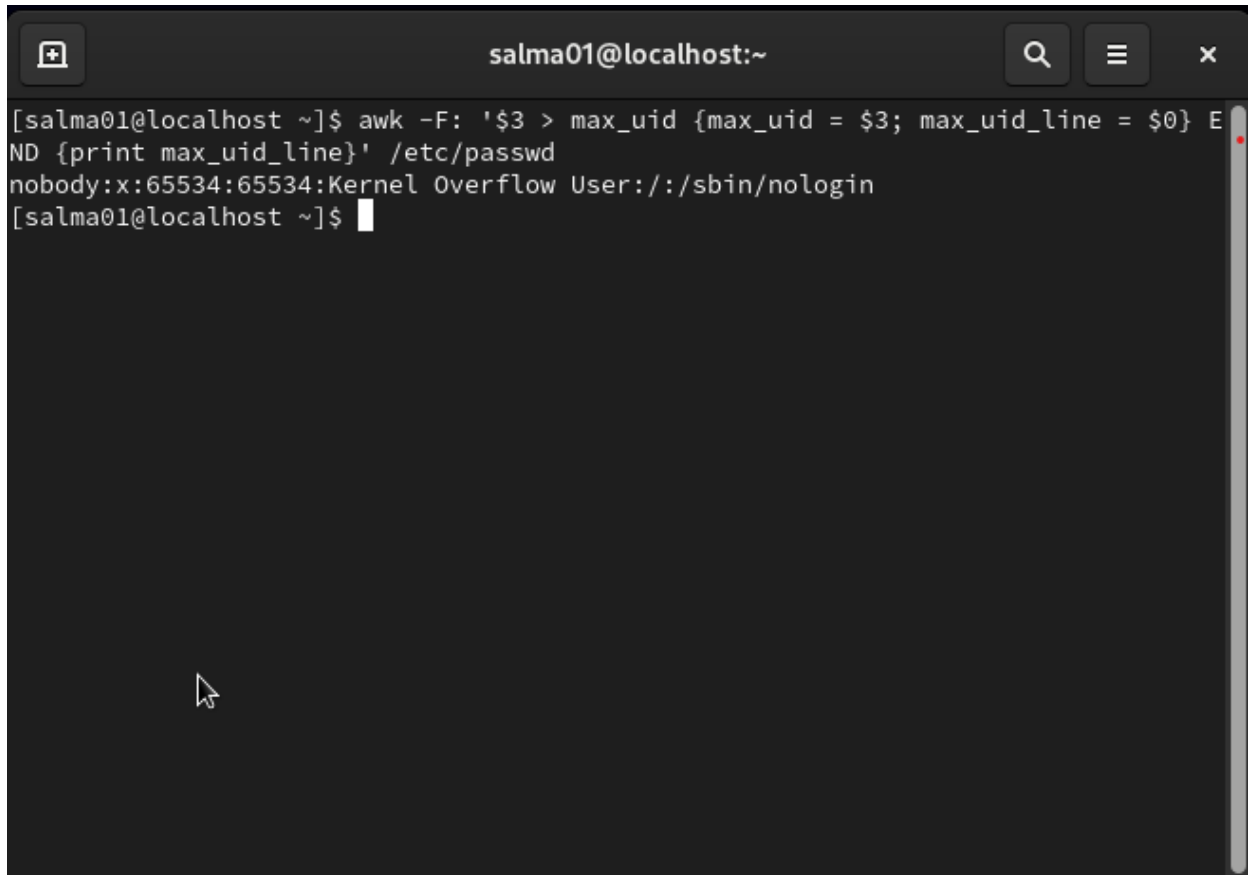
6- Change lp to mylp

awk '{gsub(/lp/, "mylp")}1' /etc/passwd

```
salma01@localhost:~  
[salma01@localhost ~]$ awk '{gsub(/lp/, "mylp")}1' /etc/passwd  
root:x:0:0:root:/root:/bin/bash  
bin:x:1:1:bin:/bin:/sbin/nologin  
daemon:x:2:2:daemon:/sbin:/sbin/nologin  
adm:x:3:4:adm:/var/adm:/sbin/nologin  
mylp  
sync:x:5:0:sync:/sbin:/bin/sync  
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown  
halt:x:7:0:halt:/sbin:/sbin/halt  
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin  
operator:x:11:0:operator:/root:/sbin/nologin  
games:x:12:100:games:/usr/games:/sbin/nologin  
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin  
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin  
systemd-coredump:x:999:997:systemd Core Dumper:/:/sbin/nologin  
dbus:x:81:81:System message bus:/:/sbin/nologin  
polkitd:x:998:996:User for polkitd:/:/sbin/nologin  
avahi:x:70:70:Avahi mDNS/DNS-SD Stack:/var/run/avahi-daemon:/sbin/nologin  
tss:x:59:59:Account used for TPM access:/dev/null:/sbin/nologin  
colord:x:997:993:User for colord:/var/lib/colord:/sbin/nologin  
clevis:x:996:992:Clevis Decryption Framework unprivileged user:/var/cache/clevis  
:/usr/sbin/nologin  
rtkit:x:172:172:RealtimeKit:/proc:/sbin/nologin  
sssd:x:995:991:User for sssd:/:/sbin/nologin
```

7- Print all information about greatest uid.

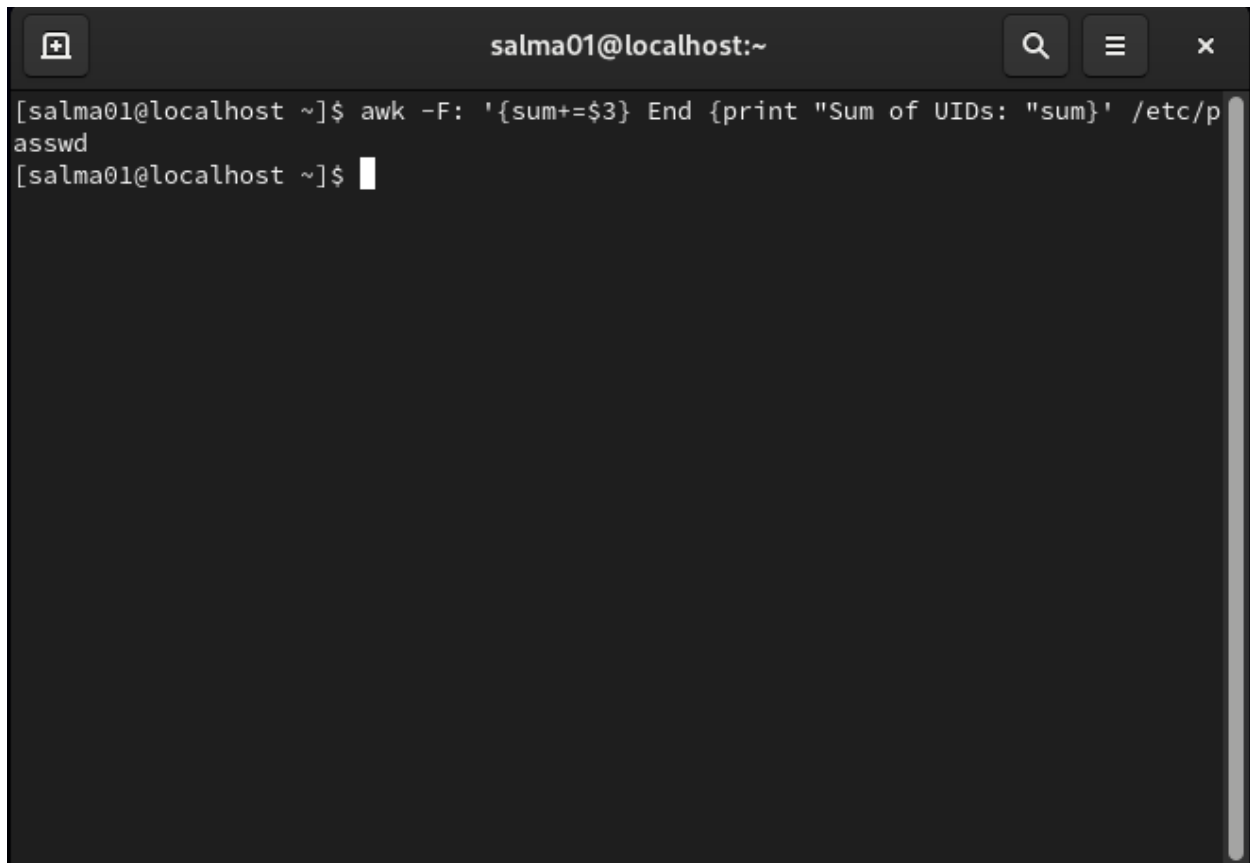
```
awk -F: '$3 > max_uid { max_uid = $3; max_uid_line = $0 } END { print max_uid_line }'  
/etc/passwd
```

A terminal window titled 'salma01@localhost:~' with search, menu, and close buttons. It shows the execution of an awk command on the /etc/passwd file. The command is: `awk -F: '$3 > max_uid {max_uid = $3; max_uid_line = $0} END {print max_uid_line}' /etc/passwd`. The output is: `nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin`. The prompt is `[salma01@localhost ~]$`.

```
[salma01@localhost ~]$ awk -F: '$3 > max_uid {max_uid = $3; max_uid_line = $0} END {print max_uid_line}' /etc/passwd  
nobody:x:65534:65534:Kernel Overflow User:/:/sbin/nologin  
[salma01@localhost ~]$
```

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

```
awk -F: '{ sum += $3 } END { print "Sum of UIDs: " sum }' /etc/passwd
```



A terminal window titled "salma01@localhost:~" with search, menu, and close buttons in the title bar. The terminal shows the command `awk -F: '{ sum += $3 } END { print "Sum of UIDs: " sum }' /etc/passwd` being entered and executed. The prompt is `[salma01@localhost ~]$`.

```
[salma01@localhost ~]$ awk -F: '{ sum += $3 } END { print "Sum of UIDs: " sum }' /etc/passwd
[salma01@localhost ~]$
```