

# Lab 5 | Handling Files

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## Question 1

```

arlind@linux:~$ mkdir Lab5
arlind@linux:~$ cd Lab5/
arlind@linux:~/Lab5$ cat /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
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:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:106:/:/nonexistent:/usr/sbin/nologin
syslog:x:104:110:/:home/syslog:/usr/sbin/nologin
_apt:x:105:65534:/:/nonexistent:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
uidd:x:107:114:/:run/uidd:/usr/sbin/nologin
tcpdump:x:108:115:/:/nonexistent:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin
saned:x:117:123:/:/var/lib/saned:/usr/sbin/nologin
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
whoopsie:x:120:125:/:/nonexistent:/bin/false
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:122:127:/:/var/lib/geoclue:/usr/sbin/nologin
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
gnome-initial-setup:x:124:65534:/:run/gnome-initial-setup:/bin/false
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
arlind:x:1000:1000:Arlind,,,:/home/arlind:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
_flatpak:x:126:135:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
lightdm:x:127:136:Light Display Manager:/var/lib/lightdm:/bin/false
arlind@linux:~/Lab5$

```

```

arlind@linux:~/Lab5$ sort -r /etc/passwd
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
whoopsie:x:120:125:/:/nonexistent:/bin/false
uidd:x:107:114:/:run/uidd:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
tcpdump:x:108:115:/:/nonexistent:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
syslog:x:104:110:/:home/syslog:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
saned:x:117:123:/:/var/lib/saned:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
root:x:0:0:root:/root:/bin/bash
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin

```

```
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/ctrl:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
messagebus:x:103:106:/:nonexistent:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
lightdm:x:127:136:Light Display Manager:/var/lib/lightdm:/bin/false
kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
gnome-initial-setup:x:124:65534:/:run/gnome-initial-setup:/bin/false
gnats:x:41:41:Gnats Bug-Reporting System (admin)/var/lib/gnats:/usr/sbin/nologin
geoclue:x:122:127:/:var/lib/geoclue:/usr/sbin/nologin
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
games:x:5:60:games:/usr/games:/usr/sbin/nologin
flatpak:x:126:135:Flatpak system-wide installation helper,,,:nonexistent:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
arlind:x:1000:1000:Arlind,,,:/home/arlind:/bin/bash
apt:x:105:65534:/:nonexistent:/usr/sbin/nologin
arlind@linux:~/Lab5$
```

```

arlind@linux:~/Lab5$ cat -bE /etc/passwd
 1 root:x:0:0:root:/root:/bin/bash$
 2 daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin$
 3 bin:x:2:2:bin:/bin:/usr/sbin/nologin$
 4 sys:x:3:3:sys:/dev:/usr/sbin/nologin$
 5 sync:x:4:65534:sync:/bin:/bin/sync$
 6 games:x:5:60:games:/usr/games:/usr/sbin/nologin$
 7 man:x:6:12:man:/var/cache/man:/usr/sbin/nologin$
 8 lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin$
 9 mail:x:8:8:mail:/var/mail:/usr/sbin/nologin$
10 news:x:9:9:news:/var/spool/news:/usr/sbin/nologin$
11 uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin$
12 proxy:x:13:13:proxy:/bin:/usr/sbin/nologin$
13 www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin$
14 backup:x:34:34:backup:/var/backups:/usr/sbin/nologin$
15 list:x:38:38:Listing List Manager:/var/list:/usr/sbin/nologin$
16 irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin$
17 gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin$
18 nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin$
19 systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin$
20 systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin$
21 systemd-timesync:x:102:104:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin$
22 messagebus:x:103:106:/:/nonexistent:/usr/sbin/nologin$
23 syslog:x:104:110:/:/home/syslog:/usr/sbin/nologin$
24 _apt:x:105:65534:/:/nonexistent:/usr/sbin/nologin$
25 tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false$
26 uidd:x:107:114:/:/run/uidd:/usr/sbin/nologin$
27 tcpdump:x:108:115:/:/nonexistent:/usr/sbin/nologin$
28 avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin$
29 usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin$
30 rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin$
31 dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin$
32 cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin$
33 speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false$
34 avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin$
35 kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/usr/sbin/nologin$
36 saned:x:117:123:/:/var/lib/saned:/usr/sbin/nologin$
37 nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin$
38 hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false$
39 whoopsie:x:120:125:/:/nonexistent:/bin/false$
40 colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin$
41 geoclue:x:122:127:/:/var/lib/geoclue:/usr/sbin/nologin$
42 pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin$
43 gnome-initial-setup:x:124:65534:/:/run/gnome-initial-setup:/bin/false$
44 gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false$
45 arlind:x:1000:1000:Arlind,,,:/home/arlind:/bin/bash$
46 systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin$
47 _flatpak:x:126:135:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin$
48 lightdm:x:127:136:Light Display Manager:/var/lib/lightdm:/bin/false$
arlind@linux:~/Lab5$

```

```

arlind@linux:~/Lab5$ head -5 /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
arlind@linux:~/Lab5$

```

```

arlind@linux:~/Lab5$ tail -5 /etc/passwd
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
arlind:x:1000:1000:Arlind,,,:/home/arlind:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
_flatpak:x:126:135:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
lightdm:x:127:136:Light Display Manager:/var/lib/lightdm:/bin/false
arlind@linux:~/Lab5$

```

## Question 2

```
arlind@linux:~/Lab5$ cut -d ':' -f 1 /etc/passwd
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
gnats
nobody
systemd-network
systemd-resolve
systemd-timesync
messagebus
syslog
_apt
tss
uidd
tcpdump
avahi-autoipd
usbmux
rtkit
dnsmasq
cups-pk-helper
speech-dispatcher
avahi
kernoops
saned
nm-openvpn
hplip
whoopsie
colord
geoclue
pulse
gnome-initial-setup
gdm
arlind
systemd-coredump
_flatpak
lightdm
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ tail -5 /etc/passwd | cut -d ':' -f 1
gdm
arlind
systemd-coredump
```



```
systemd-coredump
_flatpak
lightdm
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ cut -d ':' -s -f1,7 --output-delimiter="=" /etc/passwd
root=/bin/bash
daemon=/usr/sbin/nologin
bin=/usr/sbin/nologin
sys=/usr/sbin/nologin
sync=/bin/sync
games=/usr/sbin/nologin
man=/usr/sbin/nologin
lp=/usr/sbin/nologin
mail=/usr/sbin/nologin
news=/usr/sbin/nologin
uucp=/usr/sbin/nologin
proxy=/usr/sbin/nologin
www-data=/usr/sbin/nologin
backup=/usr/sbin/nologin
list=/usr/sbin/nologin
irc=/usr/sbin/nologin
gnats=/usr/sbin/nologin
nobody=/usr/sbin/nologin
systemd-network=/usr/sbin/nologin
systemd-resolve=/usr/sbin/nologin
systemd-timesync=/usr/sbin/nologin
messagebus=/usr/sbin/nologin
syslog=/usr/sbin/nologin
_apt=/usr/sbin/nologin
tss=/bin/false
uidd=/usr/sbin/nologin
tcpdump=/usr/sbin/nologin
avahi-autoipd=/usr/sbin/nologin
usbmux=/usr/sbin/nologin
rtkit=/usr/sbin/nologin
dnsmasq=/usr/sbin/nologin
cups-pk-helper=/usr/sbin/nologin
speech-dispatcher=/bin/false
avahi=/usr/sbin/nologin
kernoops=/usr/sbin/nologin
saned=/usr/sbin/nologin
nm-openvpn=/usr/sbin/nologin
hplip=/bin/false
whoopsie=/bin/false
colord=/usr/sbin/nologin
geoclue=/usr/sbin/nologin
pulse=/usr/sbin/nologin
gnome-initial-setup=/bin/false
gdm=/bin/false
arlind=/bin/bash
systemd-coredump=/usr/sbin/nologin
_flatpak=/usr/sbin/nologin
lightdm=/bin/false
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ cut -d ':' -f1,3 /etc/passwd | sort
apt:105
arlind:1000
avahi:115
avahi-autoipd:109
backup:34
bin:2
colord:121
cups-pk-helper:113
daemon:1
dnsmasq:112
flatpak:126
games:5
gdm:125
geoclue:122
gnats:41
gnome-initial-setup:124
hplip:119
irc:39
kernoops:116
lightdm:127
list:38
lp:7
mail:8
man:6
messagebus:103
news:9
nm-openvpn:118
nobody:65534
proxy:13
pulse:123
root:0
rtkit:111
saned:117
speech-dispatcher:114
sync:4
sys:3
syslog:104
systemd-coredump:999
systemd-network:100
systemd-resolve:101
systemd-timesync:102
tcpdump:108
tss:106
usbmux:110
uucp:10
uuid:107
whoopsie:120
www-data:33
arlind@linux:~/Lab5$
```



```
arlind@linux:~/Lab5$ cut -d ':' -f1,3 /etc/passwd | sort | tail -5
usbmux:110
uucp:10
uudd:107
whoopsie:120
www-data:33
arlind@linux:~/Lab5$
```

### Question 3

```
arlind@linux:~/Lab5$ cat /etc/passwd | wc -l
48
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ cat /etc/passwd | wc -w
88
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ cat /etc/passwd | grep -c "/bin/bash"
2
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ cat /etc/passwd | grep -c "/sbin/nologin"
38
arlind@linux:~/Lab5$
```

### Question 4

```
arlind@linux:~/Lab5$ ip add | grep 'inet'
inet 127.0.0.1/8 scope host lo
inet6 ::1/128 scope host
inet 192.168.50.187/24 brd 192.168.50.255 scope global dynamic noprefixroute wlp1s0
inet6 fe80::3812:7725:f302:6fbf/64 scope link noprefixroute
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ ip add | grep 'inet6' | sort -r
inet6 fe80::3812:7725:f302:6fbf/64 scope link noprefixroute
inet6 ::1/128 scope host
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ ip add | grep -E 'inet|inet6'
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
    inet 192.168.50.187/24 brd 192.168.50.255 scope global dynamic noprefixroute wlp1s0
    inet6 fe80::3812:7725:f302:6fbf/64 scope link noprefixroute
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ ip add | grep 'inet' | head -3 | tail -1
    inet 192.168.50.187/24 brd 192.168.50.255 scope global dynamic noprefixroute wlp1s0
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ ip add | grep -E '[[[:digit:]]{1,3}\.[:digit:]]{1,3}\.[:digit:]]{1,3}\.[:digit:]]{1,3}'
    inet 127.0.0.1/8 scope host lo
    inet 192.168.50.187/24 brd 192.168.50.255 scope global dynamic noprefixroute wlp1s0
arlind@linux:~/Lab5$
```

## Question 5

```
arlind@linux:~/Lab5$ echo "# Information about my pc" > mypc.md
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ echo "## CPU Information" >> mypc.md
arlind@linux:~/Lab5$ cat mypc.md
# Information about my pc
## CPU Information
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ lscpu | grep -i "architecture" >> mypc.md
arlind@linux:~/Lab5$ lscpu | grep -i "Thread(s) per core" >> mypc.md
arlind@linux:~/Lab5$ lscpu | grep -i "Core(s) per socket" >> mypc.md
arlind@linux:~/Lab5$ lscpu | grep -i "Model Name" >> mypc.md
arlind@linux:~/Lab5$ lscpu | grep -i "Virtualization type" >> mypc.md
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ echo "## Ram Information" >> mypc.md
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ lshw -c memory
WARNING: you should run this program as super-user.
*-memory
  description: System memory
  physical id: 0
  size: 10GiB
WARNING: output may be incomplete or inaccurate, you should run this program as super-user.
arlind@linux:~/Lab5$
```

```
arlind@linux:~/Lab5$ cat mypc.md
# Information about my pc
## CPU Information
Architecture:          x86_64
Thread(s) per core:    2
Core(s) per socket:    6
Model name:            AMD Ryzen 5 5500U with Radeon Graphics
## Ram Information
arlind@linux:~/Lab5$
```