Lab 5 | Handling files answers to lab

Question 1

Question 1.1

```
emi@cis-106vm:~/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
uuidd:x:107:114::/run/uuidd:/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
emi:x:1000:1000:emi,,,:/home/emi:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
flatpak:x:126:134:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
mythtv:x:127:135::/home/mythtv:/bin/sh
vboxadd:x:998:1::/var/run/vboxadd:/bin/false
emi@cis-106vm:~/lab5$
```

Question 1.2

```
                                                    emi@cis-106vm: ~/lab5

emi@cis-106vm:~/lab5$ tac /etc/passwd
vboxadd:x:998:1::/var/run/vboxadd:/bin/false
mythtv:x:127:135::/home/mythtv:/bin/sh
flatpak:x:126:134:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
emi:x:1000:1000:emi,,,:/home/emi:/bin/bash
gdm:x:125:130:Gnome Display Manager:/var/lib/gdm3:/bin/false
gnome-initial-setup:x:124:65534::/run/gnome-initial-setup/:/bin/false
pulse:x:123:128:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
geoclue:x:122:127::/var/lib/geoclue:/usr/sbin/nologin
colord:x:121:126:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
whoopsie:x:120:125::/nonexistent:/bin/false
hplip:x:119:7:HPLIP system user,,,:/run/hplip:/bin/false
nm-openvpn:x:118:124:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
saned:x:117:123::/var/lib/saned:/usr/sbin/nologin
kernoops:x:116:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
avahi:x:115:121:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
speech-dispatcher:x:114:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
cups-pk-helper:x:113:120:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
dnsmasq:x:112:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:111:117:RealtimeKit,,,:/proc:/usr/sbin/nologin
usbmux:x:110:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
avahi-autoipd:x:109:116:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
tcpdump:x:108:115::/nonexistent:/usr/sbin/nologin
uuidd:x:107:114::/run/uuidd:/usr/sbin/nologin
tss:x:106:111:TPM software stack,,,:/var/lib/tpm:/bin/false
_apt:x:105:65534::/nonexistent:/usr/sbin/nologin
syslog:x:104:110::/home/syslog:/usr/sbin/nologin
messagebus:x:103:106::/nonexistent:/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
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
games:x:5:60:games:/usr/games:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
sys:x:3:3:sys:/dev:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
root:x:0:0:root:/root:/bin/bash
emi@cis-106vm:~/lab5$
```

Question 1.3

```
emi@cis-106vm: ~/lab5
emi@cis-106vm:~/lab5$ cat -ne /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:Mailing 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  uuidd:x:107:114::/run/uuidd:/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$
```

Question 1.4 | 1.5

```
emi@cis-106vm: ~/lab5
emi@cis-106vm:~/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
emi@cis-106vm:~/lab5$ tail -5 /etc/passwd
emi:x:1000:1000:emi,,,:/home/emi:/bin/bash
systemd-coredump:x:999:999:systemd Core Dumper:/:/usr/sbin/nologin
_flatpak:x:126:134:Flatpak system-wide installation helper,,,:/nonexistent:/usr/sbin/nologin
mythtv:x:127:135::/home/mythtv:/bin/sh
vboxadd:x:998:1::/var/run/vboxadd:/bin/false
emi@cis-106vm:~/lab5$
```

Question 2

Question 2.1

Question 2.2

Question 2.3

Question 2.4

Question 2.5

```
emi@cis-106vm:~$ cut -d ':' -f1,3 /etc/passwd | sort | tail -5
uucp:10
uuidd:107
vboxadd:998
whoopsie:120
www-data:33
emi@cis-106vm:~$ █
```

Question 3

Question 3.1

```
emi@cis-106vm:~$ wc -l /etc/passwd
49 /etc/passwd
emi@cis-106vm:~$ █
```

Question 3.2

```
emi@cis-106vm:~$ wc -l /etc/passwd
49 /etc/passwd
emi@cis-106vm:~$ wc -w /etc/passwd
87 /etc/passwd
emi@cis-106vm:~$ █
```

Question 3.3

```
                                                        emi@cis-106
emi@cis-106vm:~$ grep '/bin/bash' /etc/passwd
root:x:0:0:root:/root:/bin/bash
emi:x:1000:1000:emi,,,:/home/emi:/bin/bash
emi@cis-106vm:~$ █
```

Question 3.4

```
emi@cis-106vm:~$ grep '/sbin/nologin' /etc/passwd
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
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
```

Question 3.5

```
emi@cis-106vm:~$ grep '^emi' /etc/passwd
emi:x:1000:1000:emi,,,:/home/emi:/bin/bash
emi@cis-106vm:~$
```

Question 4

Question 4.1

```
emi@cis-106vm:~$ ip ad | grep 'inet'
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
    inet6 fe80::e6a:b37f:6a76:7b7e/64 scope link noprefixroute
emi@cis-106vm:~$ ip ad | grep 'inet' | wc -l
4
emi@cis-106vm:~$
```

Question 4.2

```
emi@cis-106vm:~$ ip ad | grep 'inet6' | tac
    inet6 fe80::e6a:b37f:6a76:7b7e/64 scope link noprefixroute
    inet6 ::1/128 scope host
emi@cis-106vm:~$
```

Question 4.3

```
emi@cis-106vm:~$ ip add | grep -E "inet|inet6"
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
    inet6 fe80::e6a:b37f:6a76:7b7e/64 scope link noprefixroute
emi@cis-106vm:~$
```

Question 4.4

```
emi@cis-106vm:~$ ip add | grep 'inet'
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
    inet6 fe80::e6a:b37f:6a76:7b7e/64 scope link noprefixroute
emi@cis-106vm:~$ ip add | grep 'inet' | head -3
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
emi@cis-106vm:~$ ip add | grep 'inet' | head -3 | tail -l
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic noprefixroute enp0s3
emi@cis-106vm:~$
```

Question 5

Question 5.1 - 5.2

```
emi@cis-106vm:~/lab5$ echo "# Information about my pc" > mypc.md
emi@cis-106vm:~/lab5$
emi@cis-106vm:~/lab5$ ls
mypc.md
emi@cis-106vm:~/lab5$ echo ## CPU Information >> mypc.md

emi@cis-106vm:~/lab5$ cat mypc.md
# Information about my pc
emi@cis-106vm:~/lab5$ echo "## CPU Information" >> mypc.md
emi@cis-106vm:~/lab5$ cat mypc.md
# Information about my pc
## CPU Information
emi@cis-106vm:~/lab5$
```

Question 5.3

```
emi@cis-106vm:~/lab5$ lscpu | grep -i "architecture"
Architecture:                   x86_64
emi@cis-106vm:~/lab5$ lscpu | grep -i "architecture" >> mypc.md
emi@cis-106vm:~/lab5$ lscpu | grep -i "Threads"
emi@cis-106vm:~/lab5$ lscpu | grep -i "threads"
emi@cis-106vm:~/lab5$ lscpu | grep -i "cores"
emi@cis-106vm:~/lab5$ lscpu | grep -i "Model name"
Model name:                     Intel(R) Core(TM) i5-8257U CPU @ 1.40GHz
emi@cis-106vm:~/lab5$ lscpu | grep -i "Model name" >> mypc.md
emi@cis-106vm:~/lab5$ lscpu | grep -i "CPU Frecuency"
emi@cis-106vm:~/lab5$ lscpu | grep -i "Thread"
Thread(s) per core:             1
emi@cis-106vm:~/lab5$ lscpu | grep -i "Thread" >> mypc.md
emi@cis-106vm:~/lab5$ lscpu | grep -i "Core"
Thread(s) per core:             1
Core(s) per socket:             2
Model name:                     Intel(R) Core(TM) i5-8257U CPU @ 1.40GHz
emi@cis-106vm:~/lab5$ lscpu | grep -i "Core" >> mypc.md
emi@cis-106vm:~/lab5$ lscpu | grep -i "CPU MHz"
CPU MHz:                        1391.999
emi@cis-106vm:~/lab5$ lscpu | grep -i "CPU MHz" >> mypc.md
emi@cis-106vm:~/lab5$ lscpu | grep -i "VT"
emi@cis-106vm:~/lab5$ lscpu | grep -i "virtualization"
Virtualization type:            full
emi@cis-106vm:~/lab5$ lscpu | grep -i "Virtualization" >> mypc.md
emi@cis-106vm:~/lab5$
```

Question 5.4

```
emi@cis-106vm:~/lab5$ echo "## RAM Information"
## RAM Information
emi@cis-106vm:~/lab5$ echo "## RAM Information" >> mypc.md
emi@cis-106vm:~/lab5$
```

Question 5.5

```
emi@cis-106vm:~/lab5$ lshw -c memory | grep -i "Memory Size"
WARNING: you should run this program as super-user.
WARNING: output may be incomplete or inaccurate, you should run this program as super-user.
emi@cis-106vm:~/lab5$ sudo -i
[sudo] password for emi:
root@cis-106vm:~# lshw -c memory | grep -i "Memory Size"
root@cis-106vm:~# lshw -c memory
  *-firmware
       description: BIOS
       vendor: innotek GmbH
       physical id: 0
       version: VirtualBox
       date: 12/01/2006
       size: 128KiB
       capacity: 128KiB
       capabilities: isa pci cdboot bootselect int9keyboard int10video acpi
  *-memory
       description: System memory
       physical id: 1
       size: 2GiB
root@cis-106vm:~# lshw -c memory | grep -i "size"
       size: 128KiB
       size: 2GiB
root@cis-106vm:~# lshw -c memory | grep -i "size" >> mypc.md
root@cis-106vm:~#
```

Question 5.6

```
emi@cis-106vm:~/lab5$ cat mypc.md
# Information about my pc
## CPU Information
Architecture:                  x86_64
Model name:                    Intel(R) Core(TM) i5-8257U CPU @ 1.40GHz
Thread(s) per core:            1
Thread(s) per core:            1
Core(s) per socket:            2
Model name:                    Intel(R) Core(TM) i5-8257U CPU @ 1.40GHz
CPU MHz:                       1391.999
Virtualization type:           full
## RAM Information
       size: 2GiB
emi@cis-106vm:~/lab5$
```