

Part 1:

How you made the changes

```
vagrant@ubuntu2210:/home/midterm$ sudo chmod 744 p1-file
```

That the changes were made successfully

```
-rwxr--r-- 1 root root 0 Feb 15 19:20 p1-file
```

Part2:

The command that you used, include some output

```
vagrant@ubuntu2210:/home/midterm$ ps -eo comm,rss --sort rss
COMMAND      RSS
kthreadd      0
rcu_gp        0
rcu_par_gp    0
netns         0
kworker/0:0H-ev 0
kworker/0:1H-kb 0
```

screenshots from the man page for ps that illustrate how you

displayed the correct fields

```
ps -U root -u root u
```

To see every process with a user-defined format:

```
ps -eo pid,tid,class,rtprio,ni,pri,psr,pcpu,stat,wchan:14,comm
ps axo stat,euid,ruid,tty,tpgid,sses,pgrp,ppid,pid,pcpu,comm
ps -Ao pid,tt,user,fname,tmout,f,wchan
```

```
c      cmd      simple name of executable
```

```
r      rss      resident set size
```

sorted the output

## 0 order

Sorting order (overloaded). The BSD 0 option can act like -O (user-defined output format with some common fields predefined) or can be used to specify sort order. Heuristics are used to determine the behavior of this option. To ensure that the desired behavior is obtained (sorting or formatting), specify the option in some other way (e.g. with -O or --sort).

For sorting, obsolete BSD 0 option syntax is O[+|-]k<sub>1</sub>[,[+|-]k<sub>2</sub>[,...]]. It orders the processes listing according to the multilevel sort specified by the sequence of one-letter short keys k<sub>1</sub>, k<sub>2</sub>, ... described in the OBSOLETE SORT KEYS section below. The "+" is currently optional, merely re-iterating the default direction on a key, but may help to distinguish an O sort from an O format. The "-" reverses direction only on the key it precedes.

Part3:

the commands that you use

to create your user

```
vagrant@ubuntu2210:/$ sudo useradd -m usermid -s /bin/bash
```

set your user's password

```
vagrant@ubuntu2210:/home$ sudo passwd usermid
New password:
Retype new password:
passwd: password updated successfully
```

create a new group

```
vagrant@ubuntu2210:/home$ sudo groupadd midterm
```

change the group owner of the midterm directory

```
vagrant@ubuntu2210:/home$ sudo chown :midterm midterm
```

add your user to the group

```
vagrant@ubuntu2210:/home$ sudo usermod -a -G midterm usermid
```

evidence

```

drwxr-xr-x  2 root    root    4.0K Feb 15 19:51 midterm/
drwxr-x---  2 usermid usermid 4.0K Feb 15 19:49 usermid/
drwxr-x---  8 vagrant vagrant 4.0K Feb 15 19:56 vagrant/
vagrant@ubuntu2210:/home$ sudo chown :midterm midterm
vagrant@ubuntu2210:/home$ ls -l
total 24K
drwxr-xr-x  6 root    root    4.0K Feb 15 19:50 ./
drwxr-xr-x 19 root    root    4.0K Dec 10 07:52 ../
drwxr-x---  2 markus  markus  4.0K Feb  2 01:26 markus/
drwxr-xr-x  2 root    midterm 4.0K Feb 15 19:51 midterm/

```

the man page you used to create a group

```

vagrant@ubuntu2210: /home  ×  +  ▾  -  □  ×

GROUPADD(8)                                System Management Commands                                GROUPADD(8)

NAME
    groupadd - create a new group

SYNOPSIS
    groupadd [options] group

DESCRIPTION
    The groupadd command creates a new group account using the values
    specified on the command line plus the default values from the
    system. The new group will be entered into the system files as
    needed.

OPTIONS
    The options which apply to the groupadd command are:

    -f, --force
        This option causes the command to simply exit with success
        status if the specified group already exists. When used with
        -g, and the specified GID already exists, another (unique) GID
        is chosen (i.e. -g is turned off).

    -g, --gid GID
        The numerical value of the group's ID. This value must be
        unique, unless the -o option is used. The value must be
        non-negative. The default is to use the smallest ID value
        greater than or equal to GID_MIN and greater than every other
        group.

        See also the -r option and the GID_MAX description.

    -h, --help
        Display help message and exit.

    -K, --key KEY=VALUE
        Overrides /etc/login.defs defaults (GID_MIN, GID_MAX and
        others). Multiple -K options can be specified.

Manual page groupadd(8) line 1 (press h for help or q to quit)

```

how you found that man page

```
vagrant@ubuntu2210:/home$ man -k 'create a new group'
groupadd (8)          - create a new group
```

P4. Write a command that uses grep to find and print all the regular users on your system.

```
vagrant@ubuntu2210:/home$ grep -E x:[1-9][0-9][0-9][0-9]: /etc/passwd
vagrant:x:1000:1000::/home/vagrant:/bin/bash
markus:x:1001:1001::/home/markus:/bin/bash
usermid:x:1003:1003::/home/usermid:/bin/bash
```

P5. 2 points Write a command, using find , that will find and count all the files in /etc . Hide all the error messages, “Permission denied”, by sending them to a file that doesn't store any data.

```
vagrant@ubuntu2210:/home$ find /etc 2>/dev/null | wc -l
1571
```

P6. 1point Run a command that will display the version of the kernel that your VM is using:

```
vagrant@ubuntu2210:/home$ uname -r
5.19.0-26-generic
```

P7. 2 points Copy the code below into a new file \$HOME/midterm/nfntlp . Make the file executable and run it as a background process, like this: ./nfntlp &

```
vagrant@ubuntu2210:/home/midterm$ ps -eo comm,pid | grep nfntlp
nfntlp      2303
nfntlp      2306
```