

Vanier College
Faculty of Careers and Technical Programs
Department of Computer Science Technology

Advanced UNIX

Title: Mid-Term Lab Exam (Chapters 2-4 & Python Tutorial)

Student Name: Marissa Gonçalves

Submitted to Florin Pilat

October 8, 2020

Project 4-9 (p.181)

1.

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty3)

server13 login: root
Password:
Last login: Thu Oct  1 19:11:36 on tty2
[root@server13 ~]#
```

2.

```
[root@server13 ~]# touch ownersample
[root@server13 ~]# mkdir ownerdir
[root@server13 ~]# ls -l
total 8
-rw-----. 1 root root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr-x. 2 root root 4096 Oct  8 08:11 ownerdir
-rw-r--r--. 1 root root    0 Oct  8 08:11 ownersample
-rw-r--r--. 1 root root    0 Oct  1 12:05 sample2
```

3. The command is successful since the root user has permission to change groups of files/directories.

```
[root@server13 ~]# chgrp sys owner*
```

4. The command is successful since the root user has permission to change owners of files/directories.

```
[root@server13 ~]# chown marissa owner*
```

5. I did not receive an error message I am already logged in as the root user.

```
[root@server13 ~]# chown root.root owner*
```

6.

```
[root@server13 ~]# mv ownersample ownerdir
[root@server13 ~]# ls -lR
.:
total 8
-rw-----. 1 root root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr-x. 2 root root 4096 Oct  8 08:17 ownerdir
-rw-r--r--. 1 root root    0 Oct  1 12:05 sample2

./ownerdir:
total 0
-rw-r--r--. 1 root root 0 Oct  8 08:11 ownersample
[root@server13 ~]# _
```

7. The user “marissa” owns the “ownerdir” directory and “ownersample” file, since the command allows the directory contents and the selected directory itself to change to the desired owner.

```
[root@server13 ~]# chown -R marissa ownerdir
[root@server13 ~]# ls -lR
.:
total 8
-rw-----. 1 root    root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr-x. 2 marissa root 4096 Oct  8 08:17 ownerdir
-rw-r--r--. 1 root    root    0 Oct  1 12:05 sample2

./ownerdir:
total 0
-rw-r--r--. 1 marissa root 0 Oct  8 08:11 ownersample
```

8. Yes, I was able to delete the directory since I am logged in as the root user.

```
[root@server13 ~]# rm -Rf ownerdir
```

9.

```
[root@server13 ~]# exit_
```

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty3)
server13 login:
```

Project 4-10 (p.182-183)

1.

```
server13 login: marissa
Password:
Last login: Thu Oct  8 07:25:01 on tty2
[marissa@server13 ~]$ _
```

2. The group and owner of the file is “marissa”.

```
[marissa@server13 ~]$ touch specialfile
[marissa@server13 ~]$ ls -l
total 40
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Desktop
drwxr-xr-x. 3 marissa marissa 4096 Sep 18 09:09 Documents
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Downloads
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Music
drwxrwxr-x. 4 marissa marissa 4096 Oct  1 12:38 mysamples2
-rw-rw-r--. 1 marissa marissa    0 Oct  1 13:37 newfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Pictures
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Public
drwxrwxr-x. 4 marissa marissa 4096 Oct  1 13:04 samples
-rw-rw-r--. 1 marissa marissa    0 Oct  8 08:27 specialfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Templates
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Videos
```

3. The SUID special permission is set and “marissa” would be the user that can execute the file.

```
[marissa@server13 ~]$ chmod 4777 specialfile
[marissa@server13 ~]$ ls -l
total 40
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Desktop
drwxr-xr-x. 3 marissa marissa 4096 Sep 18 09:09 Documents
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Downloads
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Music
drwxrwxr-x. 4 marissa marissa 4096 Oct  1 12:38 mysamples2
-rw-rw-r--. 1 marissa marissa    0 Oct  1 13:37 newfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Pictures
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Public
drwxrwxr-x. 4 marissa marissa 4096 Oct  1 13:04 samples
-rwsrwxrwx. 1 marissa marissa    0 Oct  8 08:27 specialfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Templates
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Videos
```

4. The SUID and SGID permissions are set and “marissa” would be able to execute the file and the user is found as the group “marissa”.

```
[marissa@server13 ~]$ chmod 6777 specialfile
[marissa@server13 ~]$ ls -l
total 40
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Desktop
drwxr-xr-x. 3 marissa marissa 4096 Sep 18 09:09 Documents
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Downloads
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Music
drwxrwxr-x. 4 marissa marissa 4096 Oct 1 12:38 mysamples2
-rw-rw-r--. 1 marissa marissa 0 Oct 1 13:37 newfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Pictures
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Public
drwxrwxr-x. 4 marissa marissa 4096 Oct 1 13:04 samples
-rwsrwsrwx. 1 marissa marissa 0 Oct 8 08:27 specialfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Templates
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Videos
```

5. Yes, the execute permissions are not given and the special permissions won't retain their meaning because of this command.

```
[marissa@server13 ~]$ chmod 6444 specialfile
[marissa@server13 ~]$ ls -l
total 40
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Desktop
drwxr-xr-x. 3 marissa marissa 4096 Sep 18 09:09 Documents
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Downloads
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Music
drwxrwxr-x. 4 marissa marissa 4096 Oct 1 12:38 mysamples2
-rw-rw-r--. 1 marissa marissa 0 Oct 1 13:37 newfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Pictures
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Public
drwxrwxr-x. 4 marissa marissa 4096 Oct 1 13:04 samples
-r-r-Sr-Sr--. 1 marissa marissa 0 Oct 8 08:27 specialfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Templates
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Videos
```

- 6.

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty2)

server13 login: root
Password:
Last login: Thu Oct 8 08:09:33 on tty3
[root@server13 ~]# _
```

7. The Sticky Bit permission is set and the root user will be able to add/remove files from this directory.

```
[root@server13 ~]# mkdir /public
[root@server13 ~]# chmod 1777 /public
```

8.

```
[root@server13 ~]# touch /public/rootfile
```

9.

```
[root@server13 ~]# exit_
```

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty2)

server13 login:
```

10.

```
[marissa@server13 ~]$ chmod 6444 specialfile
[marissa@server13 ~]$ ls -l
total 40
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Desktop
drwxr-xr-x. 3 marissa marissa 4096 Sep 18 09:09 Documents
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Downloads
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Music
drwxrwxr-x. 4 marissa marissa 4096 Oct  1 12:38 mysamples2
-rw-rw-r--. 1 marissa marissa    0 Oct  1 13:37 newfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Pictures
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Public
drwxrwxr-x. 4 marissa marissa 4096 Oct  1 13:04 samples
-r-Sr-Sr--. 1 marissa marissa    0 Oct  8 08:27 specialfile
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Templates
drwxr-xr-x. 2 marissa marissa 4096 Sep 17 21:18 Videos
[marissa@server13 ~]$
```

11. There are the files “marissafile” and “rootfile” in this directory, which “marissafile” has the user “marissa” as the owner and “rootfile” has the root user as the owner.

```
[marissa@server13 ~]$ touch /public/marissafile
[marissa@server13 ~]$ ls -l /public
total 0
-rw-rw-r--. 1 marissa marissa 0 Oct  8 08:40 marissafile
-rw-r--r--. 1 root    root    0 Oct  8 08:37 rootfile
```

12. No, I wasn't prompted to confirm the file's deletion.

```
[marissa@server13 ~]$ rm /public/marissafile
```

13. I have received a message to confirm the file's deletion, since I am currently logged in as the user "marissa" and not the root user.

```
[marissa@server13 ~]$ rm /public/rootfile
rm: remove write-protected regular empty file '/public/rootfile'? y
rm: cannot remove '/public/rootfile': Operation not permitted
```

14.

```
[marissa@server13 ~]$ exit
```

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty3)

server13 login:
```

15.

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty2)

server13 login: root
Password:
Last login: Thu Oct  8 08:33:00 on tty2
[root@server13 ~]#
```

16. Yes, there is an empty entry underneath the user, group and other in the list.

```
[root@server13 ~]# getfacl aclfile
# file: aclfile
# owner: root
# group: root
user::rw-
group::r--
other::r--
```

17. Yes, there is a plus (+) sign following the mode. Basically after this command, the file's ACL list of users and groups had been modified to include "marissa" as an additional user of the file, which has the permission to read, like group, mask and other. The permission would be useful if there were a longer listing of this file.

```
[root@server13 ~]# setfacl -m u:marissa:r-- aclfile
[root@server13 ~]# ls -l aclfile
-rw-r--r--+ 1 root root 0 Oct  8 08:47 aclfile
[root@server13 ~]# getfacl aclfile
# file: aclfile
# owner: root
# group: root
user::rw-
user:marissa:r--
group::r--
mask::r--
other::r--
```

18. No, there is a period (.) sign following the mode.

```
[root@server13 ~]# setfacl -b aclfile
[root@server13 ~]# ls -l aclfile
-rw-r--r--. 1 root root 0 Oct  8 08:47 aclfile
[root@server13 ~]#
```

- 19.

```
[root@server13 ~]# exit
```

```
Fedora 26 (Workstation Edition)
Kernel 4.16.11-100.fc26.x86_64 on an x86_64 (tty2)

server13 login:
```


Discovery Exercise 10 (p. 186)

a)

```
[root@server13 ~]# chmod 754 directory
[root@server13 ~]# ls -l
total 8
-rw-r--r--. 1 root root    0 Oct  8 08:47 aclfile
-rw-----. 1 root root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr--. 2 root root 4096 Oct  8 09:01 directory
-rw-r--r--. 1 root root    0 Oct  1 12:05 sample2
```

b)

```
[root@server13 ~]# chmod 602 file
[root@server13 ~]# ls -l
total 8
-rw-r--r--. 1 root root    0 Oct  8 08:47 aclfile
-rw-----. 1 root root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr--. 2 root root 4096 Oct  8 09:01 directory
-rw----w-. 1 root root    0 Oct  8 09:03 file
-rw-r--r--. 1 root root    0 Oct  1 12:05 sample2
```

c)

```
[root@server13 ~]# chmod 276 file
[root@server13 ~]# ls -l
total 8
-rw-r--r--. 1 root root    0 Oct  8 08:47 aclfile
-rw-----. 1 root root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr--. 2 root root 4096 Oct  8 09:01 directory
--w-rwxrw-. 1 root root    0 Oct  8 09:03 file
-rw-r--r--. 1 root root    0 Oct  1 12:05 sample2
```

d)

```
[root@server13 ~]# chmod 571 file
[root@server13 ~]# ls -l
total 8
-rw-r--r--. 1 root root    0 Oct  8 08:47 aclfile
-rw-----. 1 root root 1443 Sep 17 19:47 anaconda-ks.cfg
drwxr-xr--. 2 root root 4096 Oct  8 09:01 directory
-r-xrwx--x. 1 root root    0 Oct  8 09:03 file
-rw-r--r--. 1 root root    0 Oct  1 12:05 sample2
```

Python Program:

```
right.py - /home/marissa/Documents/Python_Programs/right.py (2.7.15) x
File Edit Format Run Options Window Help
#!/usr/bin/env python
import math

sideA = float(input("Enter the first side: "))
sideB = float(input("Enter the second side: "))
sideC = float(input("Enter the third side: "))

if sideA**2 + sideB**2 == sideC**2:
    print("The triangle is a right triangle.")
    x = float(sideA/sideB)
    print("Report: %0.2f" % x)
    B = math.atan(x)
    print("Angle Radians: %0.16f" % B)
    degrees = (B/math.pi) * 180
    minutes = (degrees % 1) * 60
    seconds = (minutes % 1) * 60
    print("Sexagestimal Degrees: %0.0f" % degrees)
    print("Sexagestimal Minutes: %0.0f" % minutes)
    print("Sexagestimal Seconds: %0.0f" % seconds)
else:
    print("The triangle is not a right triangle.")
```

```
[marissa@server13 Python_Programs]$ python right.py
Enter the first side: 3
Enter the second side: 4
Enter the third side: 5
The triangle is a right triangle.
Report: 0.75
Angle Radians: 0.6435011087932844
Sexagestimal Degrees: 37
Sexagestimal Minutes: 52
Sexagestimal Seconds: 12
```

```
[marissa@server13 Python_Programs]$ python right.py
Enter the first side: 12
Enter the second side: 5
Enter the third side: 13
The triangle is a right triangle.
Report: 2.40
Angle Radians: 1.1760052070951350
Sexagestimal Degrees: 67
Sexagestimal Minutes: 23
Sexagestimal Seconds: 48
```

```
[marissa@server13 Python_Programs]$ python right.py
Enter the first side: 3
Enter the second side: 5
Enter the third side: 3
The triangle is not a right triangle.
```