

Course: CIS 68C1-01

Homework: #4

Due: Monday, October 22th, 6pm

Instructions

Complete the problems assigned below and turn in your answers by start of class on the due time above. Please feel free to email your homework or bring it with you to class.

Answer the following questions. This will require you to fully explore and learn the concepts and behavior of the commands presented in the lecture and text. Show the command used to answer and command as well as the output.

1. Use the **find** command to find all the **setuid** files on the Linux system. Hint: look at the find command's man page, especially the **-perm** option.
2. Your current working directory is / and you find that you cannot un-mount the /home filesystem. Explain the reason why, and what you would need to do to resolve this.
3. In what directory would you find various system log files?
4. In which filesystem does /etc reside and why is it there?
5. You can create a hard link to a file - can you create one to a directory? Justify why or why not.
6. You have two directories **dir1** and **dir2** under a directory called **testing** in your home directory. You create a symbolic link in **dir2** using the command:

```
ln -s ~/testing/dir1 ~/testing/dir2/mysymlink
```

Then you do the command:

```
rm -rf ~/testing/dir2/mysymlink/..
```

What was removed? Explain your answer.

7. Give the command that you would place, and the name of the file you would place it in, if you wanted to have newly created files and directories for each user created such that **others** would not have write or execute/examine access.
8. How would you know if a file was a link to another file or just a copy?
9. If you change the value of the UID for a user in **/etc/passwd**, what additional steps would you need to take? Give all commands required to perform such actions.
10. If user **emmapeel** (UID=9999, GID=2468) created a new file in the directory **guesthome** below, what would be the user ID and group ID of the new file? The UID for user **guest** is 6767, and the GID for group **project1** is 1213.

```
drwxrwsrwx  2 guest project1      512 Oct 15 23:39 guesthome/
```
11. You see a message on your UNIX system console that says something like "Out of inodes: file system = /home". What does this mean and what was the cause? How can you do to fix this problem?
12. What is the purpose of alternate superblocks in the ext2 implementation of the Berkeley Fast File System?
13. What are the major and minor numbers for the console device in Linux?
14. Describe as specifically as you can what the command below would do:

```
mkfs -t iso9660 /dev/hdc
```
15. Explain the steps required to cause the filesystem on device /dev/sd01 to be automatically mounted read-only at boot time onto the directory **/mnt/disk1**. Give the names of, and the lines added to, any files modified.
16. You run a filesystem check, and the checker utility finds that the filesystem is corrupted; specifically, it finds several files that do not have a parent directory. What happens to these files?
17. If you have six SCSI disks on Linux system, what would the full path of the device name that references the third partition of the fifth drive?