Exercise 9 - Filesystem Access

1. **Review questions**

Notice that the questions below refer to ‘ordinary’ users, and that restrictions discussed do not apply to user ***root*** (or any other user with **UID=0**).

1. What permissions are required to copy a file?

Read and Write, as the file will need to be read from as it’s written.

1. If a directory has the ‘sticky bit’ set, can you remove a file located in it (assume you have the write permission on that directory)?

Yes the file can be deleted, it can be forced with the –f command

1. What permissions will be assigned to new files and directories if the value of umask is 002?

User - read write execute

Group – read write execute

Others – read and execute

1. What is the purpose of the SUID and SGID permission bits?

SUID – Set User ID on execution

SGID – Set Group ID on execution

This allows temporary permission similar to sudo

1. What command would assign new group ownership to **project** directory and its entire content?

Chgrp (change group)

1. **In this lab, we will use file-permission modification commands.**
2. Change to your home directory, take a copy of the ***/etc/group*** file and check at its permission flags. *cp /etc/group ls -la*
3. Remove from the **group** file the read permission (for the file owner only) and then run a command that would count lines in the **group** file. *chmod g-r ./group*

*wc –l ./group*

1. Remove the group file from your home directory. Are you surprised that it worked? Which permissions were consulted for the purpose of this operation? *not surprised, as it was only the read permission that was removed from group, however it would be based off of the users permissions as it is no longer in the root directory*
2. Now try:

$ **rm –f /etc/group**

Why can’t you delete the file? *No permission, this is held in the root directory and would need root level access*

1. **This lab investigates the directory access permissions, the *x* bit.**
2. You should still have a directory called ***project2*** (created in an earlier lab).

If, by any chance, this directory no longer exists, create it (in your home directory).

1. Put a couple of files in your **project2** directory; you can use **cp**, **touch**, **>** , or any method you prefer, even **vi** ;-)
2. Make sure you are in your home directory, and then take away (from yourself) the ***x*** bit from the **project2** directory. *Chmod u-x ./Project2*
3. What are the implications of what have you just done? Use **ls** and **ls -l** on the **project2** directory and interpret the results.

*Removed the ability to see the permissions of the files held within the file*

1. Can you successfully change into the **project2** directory ?
2. Now re-assign the search permission to the **project2** directory, and test that you can again do the long listing of **project2** (change into it, etc).