

Assignment 4

a) File and directory attributes listing,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls -l
total 12
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:34 file1.txt
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:38 file2.txt
drwxr-xr-x 2 osborn osborn 4096 Apr  3 01:47 folder1
osborn@DESKTOP-GOPGL05:~/msit$
```

b) File ownership, File permissions,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls -l file1.txt
-rwxr-xr-x 1 root root 19 Apr  3 01:34 file1.txt
osborn@DESKTOP-GOPGL05:~/msit$
```

c) Changing file permissions - relative permission & absolute permission,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls -l
total 12
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:34 file1.txt
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:38 file2.txt
drwxr-xr-x 2 osborn osborn 4096 Apr  3 01:47 folder1
osborn@DESKTOP-GOPGL05:~/msit$ chmod +x file1.txt
osborn@DESKTOP-GOPGL05:~/msit$ ls -l
total 12
-rwxr-xr-x 1 osborn osborn  19 Apr  3 01:34 file1.txt
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:38 file2.txt
drwxr-xr-x 2 osborn osborn 4096 Apr  3 01:47 folder1
osborn@DESKTOP-GOPGL05:~/msit$
```

d) Changing file ownership, Changing group ownership,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls -l
total 12
-rwxr-xr-x 1 osborn osborn  19 Apr  3 01:34 file1.txt
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:38 file2.txt
drwxr-xr-x 2 osborn osborn 4096 Apr  3 01:47 folder1
osborn@DESKTOP-GOPGL05:~/msit$ sudo chown root:root file1.txt
[sudo] password for osborn:
osborn@DESKTOP-GOPGL05:~/msit$ ls -l
total 12
-rwxr-xr-x 1 root  root  19 Apr  3 01:34 file1.txt
-rw-r--r-- 1 osborn osborn  19 Apr  3 01:38 file2.txt
drwxr-xr-x 2 osborn osborn 4096 Apr  3 01:47 folder1
osborn@DESKTOP-GOPGL05:~/msit$
```

e) File system and inodes,

```
osborn@DESKTOP-GOPGL05:~/msit$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/sdb        251G  2.1G  237G   1% /
tmpfs           3.0G   0    3.0G   0% /mnt/wsl
tools          196G  131G   65G  67% /init
none            3.0G  8.0K   3.0G   1% /run
none            3.0G   0    3.0G   0% /run/lock
none            3.0G   0    3.0G   0% /run/shm
none            3.0G   0    3.0G   0% /run/user
tmpfs           3.0G   0    3.0G   0% /sys/fs/cgroup
drivers         196G  131G   65G  67% /usr/lib/wsl/drivers
lib             196G  131G   65G  67% /usr/lib/wsl/lib
C:\             196G  131G   65G  67% /mnt/c
D:\             164G   62G  102G  38% /mnt/d
osborn@DESKTOP-GOPGL05:~/msit$ ls -li file1.txt
6173 file1.txt
osborn@DESKTOP-GOPGL05:~/msit$
```

f) Hard link, Soft link,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls
file1.txt file2.txt folder1
osborn@DESKTOP-GOPGL05:~/msit$ ln file1.txt hardlink
osborn@DESKTOP-GOPGL05:~/msit$ ln -s file2.txt softlink
osborn@DESKTOP-GOPGL05:~/msit$ ll
total 24
drwxr-xr-x  3 osborn osborn 4096 Apr  3 01:57 ./
drwxr-x--- 11 osborn osborn 4096 Apr  3 01:36 ../
-rwxr-xr-x  2 root   root    19 Apr  3 01:34 file1.txt*
-rw-r--r--  1 osborn osborn  19 Apr  3 01:38 file2.txt
drwxr-xr-x  2 osborn osborn 4096 Apr  3 01:47 folder1/
-rwxr-xr-x  2 root   root    19 Apr  3 01:34 hardlink*
lrwxrwxrwx  1 osborn osborn   9 Apr  3 01:57 softlink -> file2.txt
osborn@DESKTOP-GOPGL05:~/msit$
```

g) Default permissions of file and directory and using umask,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls
file1.txt file2.txt file3.txt file4.txt file5.txt folder1
osborn@DESKTOP-GOPGL05:~/msit$ ll
total 12
drwxr-xr-x  3 osborn osborn 4096 Apr  3 02:15 ./
drwxr-x--- 11 osborn osborn 4096 Apr  3 01:36 ../
-rw-r--r--  1 osborn osborn   0 Jan  1 01:00 file1.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file2.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file3.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file4.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file5.txt
drwxr-xr-x  2 osborn osborn 4096 Apr  3 01:47 folder1/
osborn@DESKTOP-GOPGL05:~/msit$ umask 0777
osborn@DESKTOP-GOPGL05:~/msit$ mkdir folder2
osborn@DESKTOP-GOPGL05:~/msit$ ll
total 16
drwxr-xr-x  4 osborn osborn 4096 Apr  3 02:16 ./
drwxr-x--- 11 osborn osborn 4096 Apr  3 01:36 ../
-rw-r--r--  1 osborn osborn   0 Jan  1 01:00 file1.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file2.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file3.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file4.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file5.txt
drwxr-xr-x  2 osborn osborn 4096 Apr  3 01:47 folder1/
d-----  2 osborn osborn 4096 Apr  3 02:16 folder2/
osborn@DESKTOP-GOPGL05:~/msit$ █
```

h) Listing of modification and access time,

```
osborn@DESKTOP-GOPGL05:~/msit$ ls -l
total 4
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file1.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file2.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file3.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file4.txt
-rw-r--r--  1 osborn osborn   0 Apr  3 01:59 file5.txt
drwxr-xr-x  2 osborn osborn 4096 Apr  3 01:47 folder1
osborn@DESKTOP-GOPGL05:~/msit$ █
```

i) Time stamp changing,

```
osborn@DESKTOP-GOPGL05:~/msit$ ll file1.txt
-rw-r--r-- 1 osborn osborn 0 Jan  1 01:30 file1.txt
osborn@DESKTOP-GOPGL05:~/msit$ touch -t 202401010100.00 file1.txt
osborn@DESKTOP-GOPGL05:~/msit$ ll file1.txt
-rw-r--r-- 1 osborn osborn 0 Jan  1 01:00 file1.txt
osborn@DESKTOP-GOPGL05:~/msit$
```

j) File locating.

```
osborn@DESKTOP-GOPGL05:~$ find msit/ -name file1.txt
msit/file1.txt
```