Assignment 1 – File System Management

1) List out 5 files in your system which consuming most of the disk space

```
ubuntu@ip-172-31-17-14:~$ sudo du -ah
4.0K    ./.lesshst
4.0K    ./user_passwords.txt
0       ./.sudo_as_admin_successful
12K     ./.bash_history
4.0K    ./user_info.txt
8.0K    ./projects/shared
8.0K    ./projects/project_gamma
8.0K    ./projects/project_beta
8.0K    ./projects/project_alpha
40K     ./projects
4.0K    ./.bashrc
4.0K    ./.ssh/authorized_keys
8.0K    ./.ssh
4.0K    ./.bash_logout
4.0K    ./.profile
0       ./.cache/motd.legal-displayed
4.0K    ./.cache
4.0K    ./.config/htop/htoprc.tmp.gRfR0H
8.0K    ./.config/htop
4.0K    ./.config/procps
16K     ./.config
108K    .
```

```
ubuntu@ip-172-31-17-14:~$ sudo du -ah |sort -rh
108K    .
40K     ./projects
16K     ./.config
12K     ./.bash_history
8.0K    ./projects/shared
8.0K    ./projects/project_gamma
8.0K    ./projects/project_beta
8.0K    ./projects/project_alpha
8.0K    ./.ssh
8.0K    ./.config/htop
4.0K    ./user_passwords.txt
4.0K    ./user_info.txt
4.0K    ./.ssh/authorized_keys
4.0K    ./.profile
4.0K    ./.lesshst
4.0K    ./.config/procps
4.0K    ./.config/htop/htoprc.tmp.gRfR0H
4.0K    ./.cache
4.0K    ./.bashrc
4.0K    ./.bash_logout
0       ./.sudo_as_admin_successful
0       ./.cache/motd.legal-displayed
```

```
ubuntu@ip-172-31-17-14:~$ sudo du -ah |sort -rh | head -n 5
108K    .
40K     ./projects
16K     ./.config
12K     ./.bash_history
8.0K    ./projects/shared
ubuntu@ip-172-31-17-14:~$
```

2) Create one common folder in such a way that anyone can create files inside that independently and should not be able to delete other users files from that common folder.

```
ubuntu@ip-172-31-24-49:~$ cd /
ubuntu@ip-172-31-24-49:/$ cd tmp
ubuntu@ip-172-31-24-49:/tmp$ mkdir common_folder
ubuntu@ip-172-31-24-49:/tmp$ sudo chmod 1777 :tech common_folder
chmod: cannot access ':tech': No such file or directory
ubuntu@ip-172-31-24-49:/tmp$ sudo chmod 1777 :tech /common_folder
chmod: cannot access ':tech': No such file or directory
chmod: cannot access '/common_folder': No such file or directory
ubuntu@ip-172-31-24-49:/tmp$ sudo chmod 1777 common_folder
ubuntu@ip-172-31-24-49:/tmp$ sudo chown -R :tech common_folder
ubuntu@ip-172-31-24-49:/tmp$ ls -ld
drwxrwxrwt 15 root root 4096 Oct  4 06:29 .
ubuntu@ip-172-31-24-49:/tmp$
```

```
ubuntu@ip-172-31-24-49:~$ getent passwd charlie , joe
charlie:x:1001:1001::/home/charlie:/bin/sh
joe:x:1002:1002::/home/joe:/bin/sh
ubuntu@ip-172-31-24-49:~$
```

```
ubuntu@ip-172-31-24-49:~$ getent group tech
tech:x:1003:charlie,joe
ubuntu@ip-172-31-24-49:~$
```

```
ubuntu@ip-172-31-24-49:/tmp$ ls -ld common_folder
drwxrwxrwt 2 ubuntu tech 4096 Oct  4 06:29 common_folder
ubuntu@ip-172-31-24-49:/tmp$
```

```
ubuntu@ip-172-31-24-49:/tmp$ su joe
Password:
$ ls
common_folder
folder
snap-private-tmp
systemd-private-ed785bae836141e78867a65accfdac6b-ModemManager.service-u4OsAC
systemd-private-ed785bae836141e78867a65accfdac6b-chrony.service-YSDYhd
systemd-private-ed785bae836141e78867a65accfdac6b-fwupd.service-f1TCZN
systemd-private-ed785bae836141e78867a65accfdac6b-polkit.service-FFOCx1
systemd-private-ed785bae836141e78867a65accfdac6b-systemd-logind.service-hH3PMK
systemd-private-ed785bae836141e78867a65accfdac6b-systemd-resolved.service-MZEB7J
$ cd common_folder
$ echo "hello world" >> joe_file
$
```

```
$ su charlie
Password:
$ ls
joe_file
$ cat joe_file
hello world
$ rm joe_file
rm: remove write-protected regular file 'joe_file'? yes
rm: cannot remove 'joe_file': Operation not permitted
$
```

3) Create user name "shubham" and add that user in the group "adm"
a) Create folder /data , change owner and group as "root:adm
b) Change /data permission such a way that user can able to write data in this folder
and ownership of files or folder which you creates in this folder should be same as parent
folder i.e /data folder permission (root:adm)

```
ubuntu@ip-172-31-24-49:/tmp$ getent passwd shubam
shubam:x:1003:1004::/home/shubam:/bin/sh
ubuntu@ip-172-31-24-49:/tmp$
```

```
ubuntu@ip-172-31-24-49:/tmp$ getent group adm2
adm2:x:1005:shubam
ubuntu@ip-172-31-24-49:/tmp$
```

```
ubuntu@ip-172-31-24-49:/tmp$ ls -ld data1
drwxrwsr-x 2 root adm2 4096 Oct  4 06:46 data1
ubuntu@ip-172-31-24-49:/tmp$
```

```
ubuntu@ip-172-31-24-49:/tmp$ ls -ld data1
drwxrwsr-x 2 root adm2 4096 Oct  4 06:46 data1
ubuntu@ip-172-31-24-49:/tmp$ su shubam
Password:
$ cd data1
$ cat file
cat: file: No such file or directory
$ ls
file1
$ cat file1
i created a file in data1
```

```
$ ls -l file1
-rw-rw-r-- 1 shubam adm2 26 Oct  4 06:46 file1
$
```

```
$ ls -ld data1
drwxrwsr-x 2 root adm2 4096 Oct  4 06:46 data1
$
```