Question 1: (For each question below, you need to capture the screenshots along with the commands).

a)What will be printed by pwd after you run the following command?

cd ../../../

our current working directory will be root.

```
jteoh@cscd-linux01:~$ cd ../../..
jteoh@cscd-linux01:/$ pwd
/
jteoh@cscd-linux01:/$
```

b) What command will bring you back to your home directory?

cd ~ or cd

```
jteoh@cscd-linux01:/$ pwd
/
jteoh@cscd-linux01:/$ cd ~
jteoh@cscd-linux01:~$ pwd
/home/EASTERN/jteoh
jteoh@cscd-linux01:~$
```

c) Under your home directory, create a directory named CSCD240.

```
jteoh@cscd-linux01:~$ mkdir CSCD240
jteoh@cscd-linux01:~$ ls
CSCD240  netstorage
jteoh@cscd-linux01:~$
```

d) You want to access the directory named CSCD240 from your home directory. Write down both the absolute path and relative path for that

From the current working directory (home), we can cd CSCD240. Absolute path is /home/EASTERN/jteoh/CSCD240

```
jteoh@cscd-linux01:/$ pwd
/
jteoh@cscd-linux01:/$ cd /home/EASTERN/jteoh/CSCD240/
jteoh@cscd-linux01:~/CSCD240$ pwd
/home/EASTERN/jteoh/CSCD240
jteoh@cscd-linux01:~/CSCD240$
```

e) After running the command in d), what command will you use to figure out your current working directory?

pwd

```
jteoh@cscd-linux01:~/CSCD240$ pwd
/home/EASTERN/jteoh/CSCD240
jteoh@cscd-linux01:~/CSCD240$
```

f) Create a file named Assignment1 under CSCD240

```
jteoh@cscd-linux01:~/CSCD240$ touch Assignment1
jteoh@cscd-linux01:~/CSCD240$ ls
Assignment1
jteoh@cscd-linux01:~/CSCD240$
```

g) Create a hard link for the file named Assignment1 in your current directory. You can choose any name

```
jteoh@cscd-linux01:~/CSCD240$ ln Assignment1 Assignment1Link
jteoh@cscd-linux01:~/CSCD240$ ls
Assignment1  Assignment1Link
jteoh@cscd-linux01:~/CSCD240$ ls -al
total 8
drwxr-xr-x 2 jteoh IT-GenericLinuxGroup 4096 Jan 16 20:24 .
drwx------ 4 jteoh IT-GenericLinuxGroup 4096 Jan 16 20:19 ..
-rw-r--r-- 2 jteoh IT-GenericLinuxGroup    0 Jan 16 20:23 Assignment1
-rw-r--r-- 2 jteoh IT-GenericLinuxGroup    0 Jan 16 20:23 Assignment1Link
jteoh@cscd-linux01:~/CSCD240$
```

h) Suppose you are now in CSCD240 folder. What output will be produced by the following command? Explain.

ls ~ .

It will output all the files and folder that are under the home directory (~) and also the current directory (.).

```
jteoh@cscd-linux01:~/CSCD240$ ls ~ .
.:
Assignment1  Assignment1Link

/home/EASTERN/jteoh:
CSCD240  netstorage
jteoh@cscd-linux01:~/CSCD240$
```

i) You need to copy Assignment1 file from your current directory (CSCD240) to your home directory. What command will you use?

I will use cp Assignment1 ~ . This means copy Assignment1 to my home directory (~).

```
jteoh@cscd-linux01:~/CSCD240$ cp Assignment1 ~
jteoh@cscd-linux01:~/CSCD240$ ls ~
Assignment1  CSCD240  netstorage
jteoh@cscd-linux01:~/CSCD240$
```

j) Create one folder named Assignment under CSCD240. Move the file named Assignment1 from current folder (CSCD240) to Assignment folder. What commands will you use?

I will do mv Assignment1 Assignment. This means move the file Assignment1 to the folder Assignment.

```
jteoh@cscd-linux01:~/CSCD240$ mkdir Assignment
jteoh@cscd-linux01:~/CSCD240$ mv Assignment1 Assignment
jteoh@cscd-linux01:~/CSCD240$ ls
Assignment  Assignment1Link
jteoh@cscd-linux01:~/CSCD240$ cd Assignment
jteoh@cscd-linux01:~/CSCD240/Assignment$ ls
Assignment1
jteoh@cscd-linux01:~/CSCD240/Assignment$
```

k) Copy the Assignment folder from current folder (CSCD240) to your home directory. What command will you use?

Cp -r Assignment ~ . This means copy recursively (-r argument) for the folder Assignment to the home folder (~).

```
jteoh@cscd-linux01:~/CSCD240$ cp -r Assignment ~
jteoh@cscd-linux01:~/CSCD240$ ls
Assignment  Assignment1Link
jteoh@cscd-linux01:~/CSCD240$ ls ~
Assignment  Assignment1  CSCD240  netstorage
jteoh@cscd-linux01:~/CSCD240$
```

l) What is the difference between 'ls –l' and 'ls –al' commands?

Ls -l means long listing. This shows all the detailed information (permissions, date last modified, owner, group, and file size). However, it does not include hidden files. Ls –al will display all the hidden files as well.

m) Make a new command dir that is equivalent to unix command ls –al. Capture the screenshot of the command that can achieve that and the results.

```
jteoh@cscd-linux01:~/CSCD240$ alias dir="ls -al"
jteoh@cscd-linux01:~/CSCD240$ dir
total 12
drwxr-xr-x 3 jteoh IT-GenericLinuxGroup 4096 Jan 16 20:27 .
drwx------ 5 jteoh IT-GenericLinuxGroup 4096 Jan 16 20:28 ..
drwxr-xr-x 2 jteoh IT-GenericLinuxGroup 4096 Jan 16 20:27 Assignment
-rw-r--r-- 2 jteoh IT-GenericLinuxGroup    0 Jan 16 20:23 Assignment1Link
jteoh@cscd-linux01:~/CSCD240$
```

n) We'd like to get a warning or prompt information before we delete the subdirectory Assignment under CSCD240. What command will you use?

Rm -i <filename/directory> will prompt the user before removing.

```
jteoh@cscd-linux01:~/CSCD240$ rm -i Assignment1Link
rm: remove regular empty file 'Assignment1Link'?
```

o) Use rmdir to delete subdirectory Assignment under CSCD240. Does it delete the directory? Why or why not?

No. rmdir will only work if the directory is empty. Our CSCD240 directory is not empty currently.

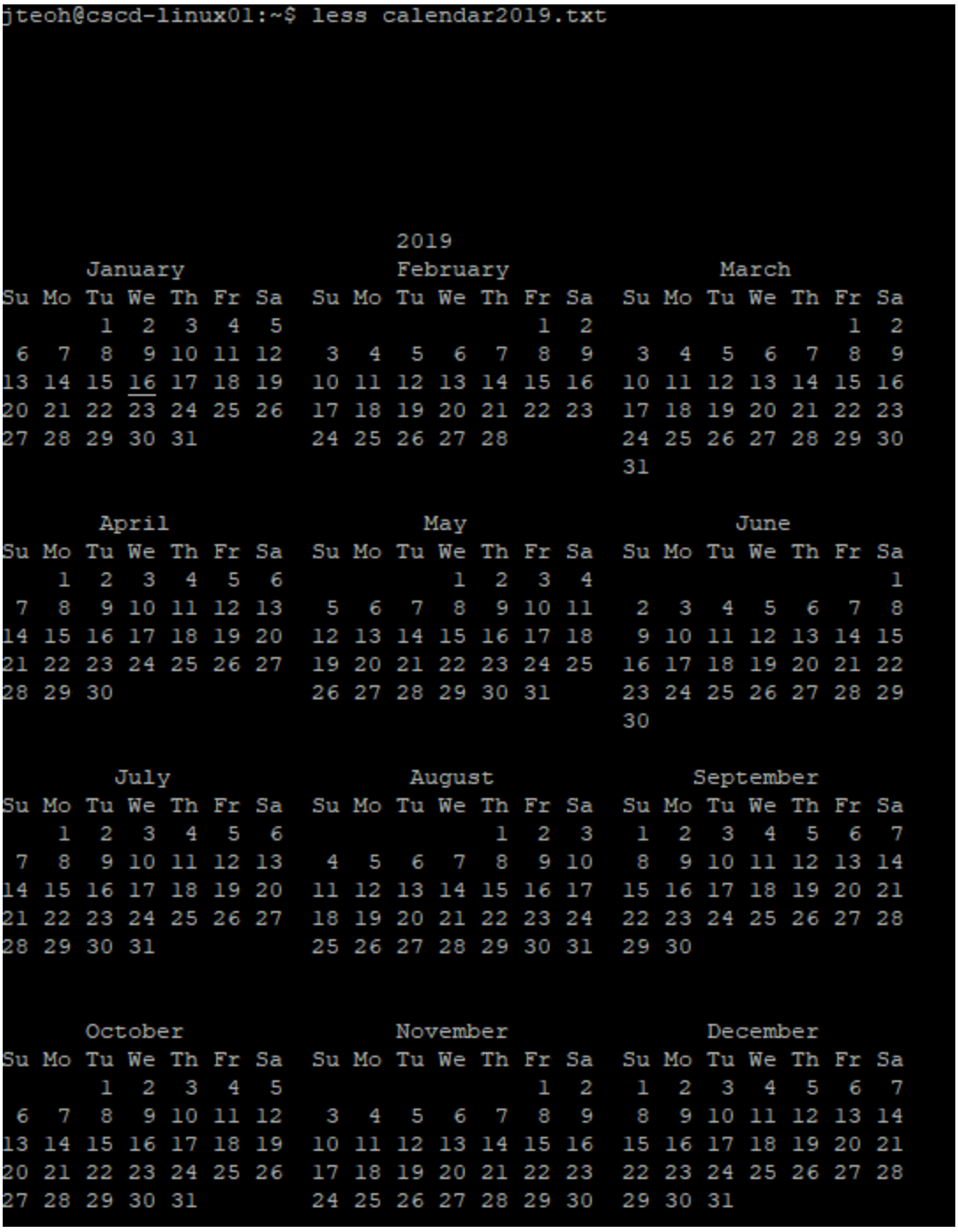
Question 2. Suppose you are in your home directory.

a) Create a text file named calendar2019.txt using command cal 2019 > calendar2019.txt. Issue the more command or the less command on calendar2019.txt and capture the screenshot of the output.

```
jteoh@cscd-linux01:~$ more calendar2019.txt
                              2019
      January                 February                March
Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa
       1  2  3  4  5                  1  2                  1  2
 6  7  8  9 10 11 12   3  4  5  6  7  8  9   3  4  5  6  7  8  9
13 14 15 16 17 18 19  10 11 12 13 14 15 16  10 11 12 13 14 15 16
20 21 22 23 24 25 26  17 18 19 20 21 22 23  17 18 19 20 21 22 23
27 28 29 30 31        24 25 26 27 28        24 25 26 27 28 29 30
                                            31

       April                   May                     June
Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6            1  2  3  4                     1
 7  8  9 10 11 12 13   5  6  7  8  9 10 11   2  3  4  5  6  7  8
14 15 16 17 18 19 20  12 13 14 15 16 17 18   9 10 11 12 13 14 15
21 22 23 24 25 26 27  19 20 21 22 23 24 25  16 17 18 19 20 21 22
28 29 30              26 27 28 29 30 31     23 24 25 26 27 28 29
                                            30

        July                   August                September
Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa  Su Mo Tu We Th Fr Sa
    1  2  3  4  5  6                  1  2  3   1  2  3  4  5  6  7
 7  8  9 10 11 12 13   4  5  6  7  8  9 10   8  9 10 11 12 13 14
--More--(63%)
```



How to move to the beginning of calendar2019.txt in less?

“g” will work.

How to move to the end of calendar2019.txt in less? How to scroll down or up?

“G” will move to the end of the file. “u” scrolls up a single page, “d” scrolls down a single page.

b) Remove read permission from calendar2019.txt for the owner and all permissions for the group. Write down the commands using both symbolic and numeric (octal) values. Capture the screenshot for the commands and prove that the permission was changed. (4 points ; 2 points for each command)

Chmod u-r,g-rwx calendar2019.txt

```
jteoh@cscd-linux01:~$ ls -l calendar2019.txt
-rw-r--r-- 1 jteoh IT-GenericLinuxGroup 2184 Jan 16 20:34 calendar2019.txt
jteoh@cscd-linux01:~$ chmod u-r,g-rwx calendar2019.txt
jteoh@cscd-linux01:~$ ls -l calendar2019.txt
--w----r-- 1 jteoh IT-GenericLinuxGroup 2184 Jan 16 20:34 calendar2019.txt
jteoh@cscd-linux01:~$
```

Chmod 204 calendar2019.txt

```
jteoh@cscd-linux01:~$ ls -l calendar2019.txt
-rw-r--r-- 1 jteoh IT-GenericLinuxGroup 2184 Jan 16 20:34 calendar2019.txt
jteoh@cscd-linux01:~$ chmod 204 calendar2019.txt
jteoh@cscd-linux01:~$ ls -l calendar2019.txt
--w----r-- 1 jteoh IT-GenericLinuxGroup 2184 Jan 16 20:34 calendar2019.txt
jteoh@cscd-linux01:~$
```

Question 3. Explain the following outputs from a unix command: (4 points, one for each)

-rw-r--r-- 1 syasmin IT-GenericLinuxGroup 3637 Sep 21 2015 file.txt

First dash indicates that it is a file, and not a directory. Next are the permissions, each a group of 3. They represent the read, write and execute command. Following is the number of links (1), user (syasmin), and group (IT-GenericLinuxGroup), then the file size (3637) and the date last modified (Sep 21 2015). The filename is file.txt.

drwx------ 16 syasmin IT-GenericLinuxGroup 4096 Mar 29 2016 CSCD240

Since we see that this starts with a d and not a dash, we know this is a directory. This directory has user permission read, write and execute, while group and others have no permission at all. Again, the user and group are the same ones as before. This time, we have 16 links. This means we have a potential of 14 other files and/or folders. It is not 16 because an empty folder will contain two links (. and ..). The size of this folder is 4096, last modified (mar 29 2016) and folder name CSCD240.

lrwxrwxrwx 1 syasmin IT-GenericLinuxGroup 15 Nov 21 2015 netstorage -> /mnt/ns-syasmin

l represents a soft/symlink. All users (user, group and others) have read write and execute permissions. Owner and group remain the same as previous examples. Size of 15. Last modified date of Nov 21 2015. Lastly they show that the file 'netstorage' actually points to /mnt/ns-syasmin.

-rw-r--r-- 2 syasmin IT-GenericLinuxGroup 80 Jan 24 2017 hello.c

This is a file with read and write permissions for user, read for group and others. User and group remain the same as previous examples. Size of 80 and last modified date of Jan 24 2017. The file hello.c