Question 1:

What will the following command print?

cd ../../../

Shows root directory

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

What command will bring you back to your home directory?

cd ~

```
gpolyak@cscd-linux01:~$ cd ../../..
gpolyak@cscd-linux01:/$ cd ~
gpolyak@cscd-linux01:~$
```

Under your home directory, create a directory named CSCD240.

mkdir CSCD240

```
gpolyak@cscd-linux01:~$ mkdir CSCD240
gpolyak@cscd-linux01:~$ ls
CSCD240  Desktop  Documents  Downloads
gpolyak@cscd-linux01:~$
```

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

relative: ./CSCD240

absolute: /home/EASTERN/gpolyak/CSCD240

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

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

pwd

(see above screenshot)

Create a file named Assignment1 under CSCD240.

cat > Assignment1

```
gpolyak@cscd-linux01:~/CSCD240$ cat > Assignment1

^C
gpolyak@cscd-linux01:~/CSCD240$ ls
Assignment1
gpolyak@cscd-linux01:~/CSCD240$
```

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

```
gpolyak@cscd-linux01:~/CSCD240$ ln Assignment1 hardLink
gpolyak@cscd-linux01:~/CSCD240$ ls
Assignment1  hardLink
gpolyak@cscd-linux01:~/CSCD240$
```

Suppose you are now in CSCD240 folder. What output will be produced by the following command? Explain.
ls ~ .
A list of the contents of the parent (home) directory is presented instead of the current directory with the use of the ~

```
gpolyak@cscd-linux01:~/CSCD240$ ls ~
CSCD240  Desktop  Documents  Downloads  Music  netstorage  Pictures  Public  Templates  Videos
gpolyak@cscd-linux01:~/CSCD240$
```

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

```
gpolyak@cscd-linux01:~/CSCD240$ cp Assignment1 ../
gpolyak@cscd-linux01:~/CSCD240$ ls ~
Assignment1  Desktop    Downloads  netstorage  Public     Videos
CSCD240      Documents  Music      Pictures    Templates
gpolyak@cscd-linux01:~/CSCD240$ ls
Assignment1  hardLink
gpolyak@cscd-linux01:~/CSCD240$
```

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

```
gpolyak@cscd-linux01:~/CSCD240$ mkdir Assignment
gpolyak@cscd-linux01:~/CSCD240$ cp Assignment1 ./Assignment
gpolyak@cscd-linux01:~/CSCD240$ ls
Assignment  Assignment1  hardLink
gpolyak@cscd-linux01:~/CSCD240$ cd Assignment/
gpolyak@cscd-linux01:~/CSCD240/Assignment$ ls
Assignment1
gpolyak@cscd-linux01:~/CSCD240/Assignment$
```

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

```
gpolyak@cscd-linux01:~/CSCD240$ cp -r Assignment ~
gpolyak@cscd-linux01:~/CSCD240$ cd ~
gpolyak@cscd-linux01:~$ ls
Assignment   CSCD240  Documents  Music       Pictures  Templates
Assignment1  Desktop  Downloads  netstorage  Public    Videos
gpolyak@cscd-linux01:~$
```

What is the difference between 'ls –l' and 'ls –al' commands?
ls -al lists all files and folders in the current directory including those that start with "." in the long format which shows more information about each item in the directory. ls -l will do the same thing except that it will not include those that start with "."

```
gpolyak@cscd-linux01:~$ ls -l
total 44
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:14 Assignment
-rw-r--r-- 1 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:09 Assignment1
drwxr-xr-x 3 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:11 CSCD240
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Desktop
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Documents
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Downloads
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Music
lrwxrwxrwx 1 gpolyak IT-GenericLinuxGroup   15 Jan 18 09:47 netstorage -> /mnt/ns-gpolyak
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Pictures
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Public
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Templates
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Videos
gpolyak@cscd-linux01:~$ ls -al
total 148
drwx------ 27 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:14 .
drwxr-xr-x  9 root    root                    0 Jan 18 10:11 ..
drwxr-xr-x  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .AMD
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:14 Assignment
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:09 Assignment1
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup  220 Dec 28  2015 .bash_logout
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup 3637 Dec 28  2015 .bashrc
drwx------ 14 gpolyak IT-GenericLinuxGroup 4096 Jan 18 09:47 .cache
drwx------ 12 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .config
drwxr-xr-x  3 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:11 CSCD240
drwx------  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .dbus
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Desktop
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup   55 Apr 11  2017 .dmrc
```

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.
echo "$(ls -al)"

```
gpolyak@cscd-linux01:~$ echo "$(ls -al)"
total 148
drwx------ 27 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:14 .
drwxr-xr-x 20 root    root                    0 Jan 18 11:10 ..
drwxr-xr-x  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .AMD
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:14 Assignment
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:09 Assignment1
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup  220 Dec 28  2015 .bash_logout
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup 3637 Dec 28  2015 .bashrc
drwx------ 14 gpolyak IT-GenericLinuxGroup 4096 Jan 18 09:47 .cache
drwx------ 12 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .config
drwxr-xr-x  3 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:48 CSCD240
drwx------  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .dbus
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Desktop
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup   55 Apr 11  2017 .dmrc
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Documents
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Downloads
drwx------  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .gconf
drwx------  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .gnome2
drwx------  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .gnome2_private
drwx------  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .gnupg
drwx------  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .gvfs
-rw-------  1 gpolyak IT-GenericLinuxGroup  700 Apr 11  2017 .ICEauthority
drwx------  3 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .local
drwx------  4 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 .mozilla
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Music
lrwxrwxrwx  1 gpolyak IT-GenericLinuxGroup   15 Jan 18 09:47 netstorage -> /mnt/ns-gpolyak
drwxr-xr-x  2 gpolyak IT-GenericLinuxGroup 4096 Apr 11  2017 Pictures
-rw-r--r--  1 gpolyak IT-GenericLinuxGroup  675 Dec 28  2015 .profile
```

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

```
gpolyak@cscd-linux01:~/CSCD240$ rm -ri Assignment
rm: descend into directory 'Assignment'? n
```

Use rmdir to delete subdirectory Assignment under CSCD240. Does it delete the directory? Why or why not?
No because there are still contents inside the directory

```
gpolyak@cscd-linux01:~/CSCD240$ rmdir Assignment
rmdir: failed to remove 'Assignment': Directory not empty
gpolyak@cscd-linux01:~/CSCD240$
```

Question 2:
Create a text file named calendar2017.txt using command cal 2017 > calendar2017.txt. Issue the more command or the less command on calendar2017.txt and capture the screenshot of the output. How to move to the beginning of calendar2017.txt in less? How to move to the end of calendar2017.txt in less? How to scroll down or up?
Move to beginning in less by hitting "b" and go back pages. Move to the end by hitting the spacebar and going forward a page. The arrow keys will scroll.

```
                               2017

      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  6  7              1  2  3  4              1  2  3  4
 8  9 10 11 12 13 14   5  6  7  8  9 10 11   5  6  7  8  9 10 11
15 16 17 18 19 20 21  12 13 14 15 16 17 18  12 13 14 15 16 17 18
22 23 24 25 26 27 28  19 20 21 22 23 24 25  19 20 21 22 23 24 25
29 30 31              26 27 28              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         1  2  3  4  5  6                 1  2  3
 2  3  4  5  6  7  8   7  8  9 10 11 12 13   4  5  6  7  8  9 10
 9 10 11 12 13 14 15  14 15 16 17 18 19 20  11 12 13 14 15 16 17
16 17 18 19 20 21 22  21 22 23 24 25 26 27  18 19 20 21 22 23 24
23 24 25 26 27 28 29  28 29 30 31           25 26 27 28 29 30
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            1  2  3  4  5                 1  2
 2  3  4  5  6  7  8   6  7  8  9 10 11 12   3  4  5  6  7  8  9
 9 10 11 12 13 14 15  13 14 15 16 17 18 19  10 11 12 13 14 15 16
16 17 18 19 20 21 22  20 21 22 23 24 25 26  17 18 19 20 21 22 23
23 24 25 26 27 28 29  27 28 29 30 31        24 25 26 27 28 29 30
30 31

--More--(75%)
```

Remove read permission from calendar2017.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.
Command with numeric value: chmod 204 calendar2017.txt

```
gpolyak@cscd-linux01:~/CSCD240$ ls -l
total 16
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:11 Assignment
-rw-r--r-- 2 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:01 Assignment1
-rw-r--r-- 1 gpolyak IT-GenericLinuxGroup 2180 Jan 18 11:14 calendar2017.txt
-rw-r--r-- 2 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:01 hardLink
gpolyak@cscd-linux01:~/CSCD240$
```

```
gpolyak@cscd-linux01:~/CSCD240$ chmod u-r calendar2017.txt
gpolyak@cscd-linux01:~/CSCD240$ chmod g-rwx calendar2017.txt
gpolyak@cscd-linux01:~/CSCD240$ ls -l
total 16
drwxr-xr-x 2 gpolyak IT-GenericLinuxGroup 4096 Jan 18 10:11 Assignment
-rw-r--r-- 2 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:01 Assignment1
--w----r-- 1 gpolyak IT-GenericLinuxGroup 2180 Jan 18 11:14 calendar2017.txt
-rw-r--r-- 2 gpolyak IT-GenericLinuxGroup    1 Jan 18 10:01 hardLink
gpolyak@cscd-linux01:~/CSCD240$
```

Question 3:
Explain the following outputs from a unix command:
“ls -l”

-rw-r--r-- 1 syasmin IT-GenericLinuxGroup 3637 Sep 21 2015 file.txt
A file that can be read and written to by the owner, only read by everyone else, has 1 link, belongs to syasmin and the IT-GenericLinuxGroup, is 3637 bytes in size, was created on Sep 21 2015, and is named file.txt.

drwx------ 16 syasmin IT-GenericLinuxGroup 4096 Mar 29 2016 CSCD240
A directory that can only be read, written to, and executed by the owner, has 16 links or subdirectories, belongs to syasmin and the group, is 4096 bytes in size, was created on Mar 29 2016, and is named CSCD240.

lrwxrwxrwx 1 syasmin IT-GenericLinuxGroup 15 Nov 21 2015 netstorage -> /mnt/ns-syasmin
A link that can be read, written to, and executed by everyone, has 1 link, and belongs to syasmin and the group, is 15 bytes in size, was created on Nov 21 2015, and links from “netstorage” to /mnt/ns-syasmin

-rw-r--r-- 2 syasmin IT-GenericLinuxGroup 80 Jan 24 2017 hello.c
A file that can be read and written to by the owner, read by everyone else, has 2 links, belongs to syasmin and the group, is 80 bytes in size, was created on Jan 24 2017, and is named hello.c.