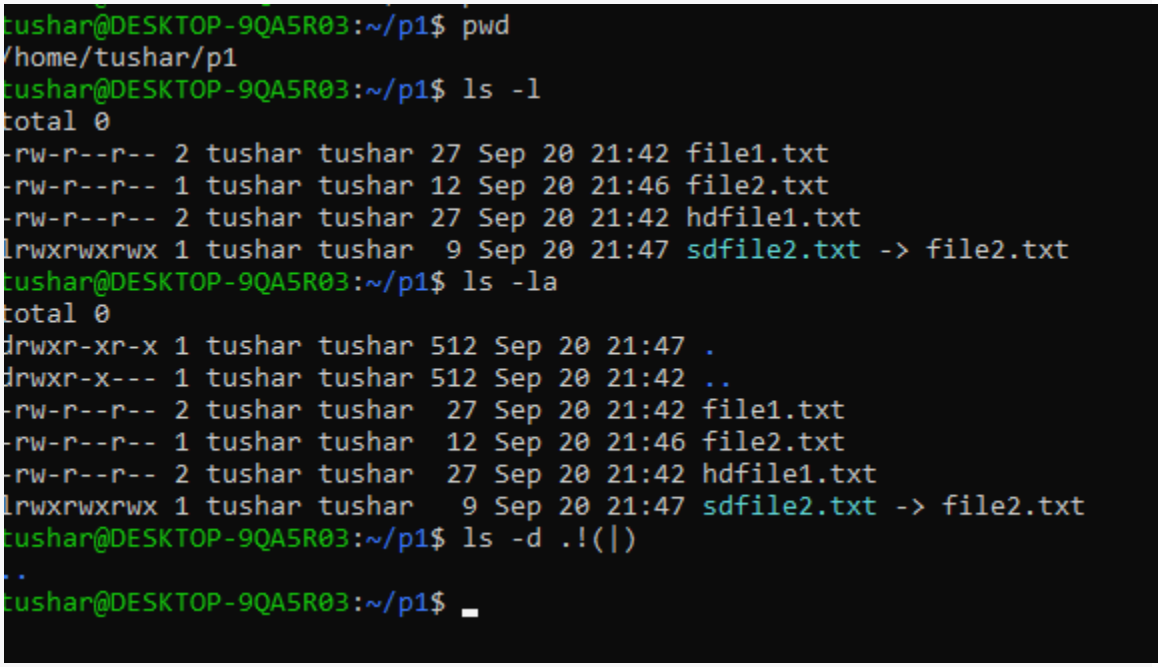
Linux Command

Question-1.

1. - use a command to show the current working directory
   - list the directory contents in the short and long format
   (with file permissions,owner,size etc,.).
   Explore attributes given in long format e.g. file type, file permissions, file size, file owner etc.
   - list all files along with hidden files in current working directory.
   - list only hidden files in the directory
   (**Hint** : use **pwd**, **ls, echo** commands)

   pwd
   ls -l
   ls -la

```
ls -d .!(|.)
```



```
tushar@DESKTOP-9QA5R03:~$ ls -d .!(|)
..              .bash_logout   .config     .lesshst   .motd_shown
.bash_history   .bashrc        .landscape  .local     .profile
tushar@DESKTOP-9QA5R03:~$
```

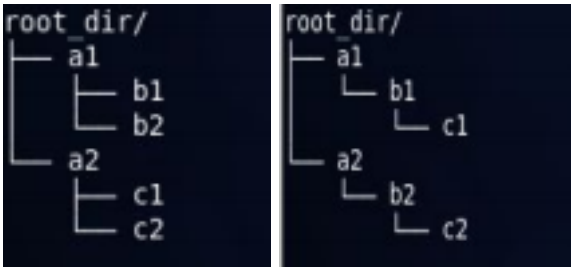
2. Make a directory and name it as **cdac-dir** and change the current working directory to the new directory.(Hint : use **mkdir,cd** commands).

mkdir cdac-dir

cd cdac-dir

3. Create following nested directories inside current directory by invoking single command for only one time.

Note : here root_dir is current directory.



Directory structure 1 Directory structure 2

(Hint : explore man page of **mkdir**).

```
mkdir -p a1/{b1,b2} a2/{c1,c2}
mkdir -p a1/b1/c1 a2/b2/c2
```

4. List the directories(folders), then remove the **cdac-dir** directory and list the folders again to show that it is no longer present.(Hint : use **rm, ls** command).

->

```
ls
cd
rm -r cdac-dir
```

Question-2.

1. Display the **man-page** for **ls**, but redirect the output into **temp.txt**, then use the **cat, less**, and **more** commands to display the new file.

```
man ls
man ls>temp.txt
```

2. Display the initial 10 lines and final 5 lines of **temp.txt** with the obvious Linux commands.(Hint: use **head** and **tail** commands).

   head -n 10 temp.txt
   tail -n 5 temp.txt

3. Copy **temp.txt** to another directory and rename it there.
   (**Hint**: use **cp** to copy and **mv** command to rename).
   ->
   mkdir tempfolder
   cp temp.txt tempfolder
   mv tempfolder temp

4. Display the number of lines, words and characters in file using Linux command (**Hint**: use **wc** command).

   wc temp.txt

5. Use history command to display last 10 commands used.
   (**Hint**: use **history** command).

   history | tail

Question-3.

1. Create tar archive file of any directory present in your home directory.

(**Hint**: use **tar** command)
- list the contents of the archive file without extracting.

```
tushar@DESKTOP-9QA5R03:~/z1/x1$ tar -cf filename.tar f1.txt f2.txt f3.txt
tushar@DESKTOP-9QA5R03:~/z1/x1$ ls
f1.txt  f2.txt  f3.txt  filename.tar
tushar@DESKTOP-9QA5R03:~/z1/x1$ tar -xf filename.tar
tushar@DESKTOP-9QA5R03:~/z1/x1$ tar -tf filename.tar
f1.txt
f2.txt
f3.txt
tushar@DESKTOP-9QA5R03:~/z1/x1$ ls -l
total 12
-rw-r--r-- 1 tushar tushar    11 Sep 20 16:53 f1.txt
-rw-r--r-- 1 tushar tushar    12 Sep 20 16:54 f2.txt
-rw-r--r-- 1 tushar tushar    11 Sep 20 16:54 f3.txt
-rw-r--r-- 1 tushar tushar 10240 Sep 20 16:55 filename.tar
tushar@DESKTOP-9QA5R03:~/z1/x1$
```

tushar@DESKTOP-9QA5R03:~/z1/x1$ tar -xf filename.tar
tushar@DESKTOP-9QA5R03:~/z1/x1$ tar -tf filename.tar

2. Create zip file of another directory. (**Hint**: use **zip** command) - list the contents of the zip file without extracting.

zip demozip.zip a.txt

zipinfo -l zipfile.zip

gzip -k filename.ext : makes .gz file and keeps the base file
gunzip filename.ext.gz : unzips the zip file

3. Give read, write & execute permissions to your file. (**Hint**: use **chmod** command)

chmod ugo+rwx
chmod 777 file.txt

4. Change ownership of that file.(**Hint**: use **chown** command)

sudo chown tushar51 filename.tar

```
tushar@DESKTOP-9QA5R03:~/z1/x1$ chown tushar51 filename.tar
chown: changing ownership of 'filename.tar': Operation not permitted
tushar@DESKTOP-9QA5R03:~/z1/x1$ sudo chown tushar51 filename.tar
[sudo] password for tushar:
tushar@DESKTOP-9QA5R03:~/z1/x1$ ls -l
total 12
-rw-r--r-- 1 tushar   tushar    11 Sep 20 16:53 f1.txt
-rw-r--r-- 1 tushar   tushar    12 Sep 20 16:54 f2.txt
-rw-r--r-- 1 tushar   tushar    11 Sep 20 16:54 f3.txt
-rwxrwxrwx 1 tushar51 tushar 10240 Sep 20 16:55 filename.tar
tushar@DESKTOP-9QA5R03:~/z1/x1$ I
```

5. List processes running in shell, all running processes(**Hint**: use man page of **ps** command) and show top processes in decreasing order of their resource utilization.(**Hint**: use **top** command).

->

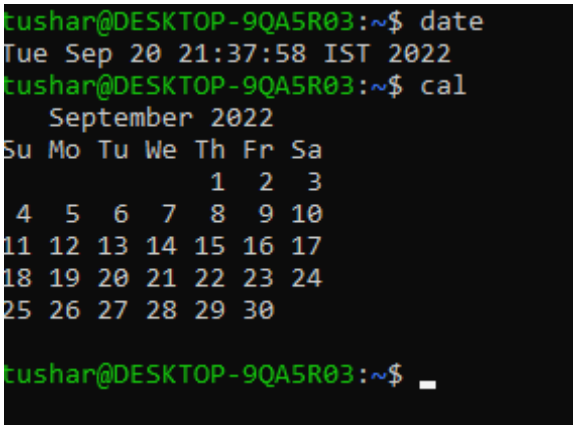
top

ps aux --sort -%mem | head -10

```
tushar@DESKTOP-9QA5R03:~$ ps aux --sort -%mem | head -10
USER         PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
tushar       416  0.0  0.0  17268  3912 tty5     S    21:28   0:00 -bash
tushar        12  0.0  0.0  17268  3880 ?        S    10:07   0:00 -bash
tushar       209  0.0  0.0  17268  3880 ?        S    15:14   0:00 -bash
tushar       164  0.0  0.0  17268  3876 ?        S    11:35   0:00 -bash
tushar        97  0.0  0.0  17268  3868 ?        S    10:27   0:00 -bash
root         245  0.0  0.0  19824  3556 ?        S    15:23   0:00 sudo su
root          79  0.0  0.0  19824  3552 ?        S    10:09   0:00 sudo su
root         187  0.0  0.0  19824  3552 ?        S    11:42   0:00 sudo su
root         140  0.0  0.0  19824  3548 ?        S    10:39   0:00 sudo su
tushar@DESKTOP-9QA5R03:~$
```

Question-4.

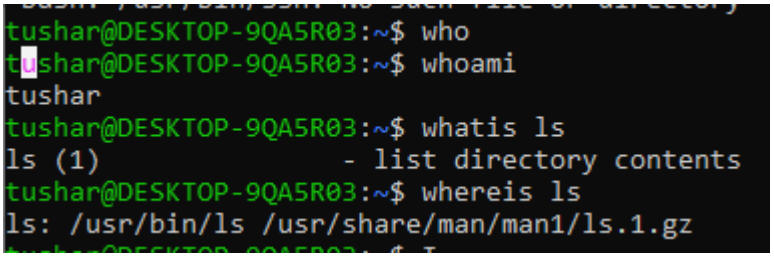
1. Display current time and calendar (**Hint**: use **date, cal** commands)



2. Change the current date and time of the system to following 14th March 2024, 10:10 AM

-> timedatectl set-time '2019-12-01'
timedatectl

3. Explore following commands
who, whoami, whatis, whereis, (**Hint**: use man pages).



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1. Create one directory named linux. cd to that directory and create one file named **testperms.txt.** Check permissions of that file. Check value of **umask**. Change the value of umask and create one new file **newtestperms.txt** and check its permissions. Note down the difference.(Hint: use **umask, ls** command)

=>

mkdir linux

cd linux

touch testperms.txt

umask or umask -S

umask 002

touch newtestperms.txt

Umask -S … changes the permission

2. Create a file and name it as file1.txt and create a hardlink to this file.
(Hint use **ln** command).

```
tushar@DESKTOP-9QA5R03:~/p1$ cat >file1.txt
abcdefghijklmnopqrstuvwxyz
^C
tushar@DESKTOP-9QA5R03:~/p1$ cat file1.txt
abcdefghijklmnopqrstuvwxyz
tushar@DESKTOP-9QA5R03:~/p1$ ln file1.txt hdfile1.txt
tushar@DESKTOP-9QA5R03:~/p1$ ls
file1.txt  hdfile1.txt
tushar@DESKTOP-9QA5R03:~/p1$ cat hdfile1.txt
abcdefghijklmnopqrstuvwxyz
tushar@DESKTOP-9QA5R03:~/p1$
```

3. Create a file and name it as file2.txt and create a softlink to this file.
(Hint use **ln** command).

```
tushar@DESKTOP-9QA5R03:~/p1$ cat >file2.txt
poiuukjhshs
^C
tushar@DESKTOP-9QA5R03:~/p1$ ln -s file2.txt sdfile2.txt
tushar@DESKTOP-9QA5R03:~/p1$ ls
file1.txt  file2.txt  hdfile1.txt  sdfile2.txt
tushar@DESKTOP-9QA5R03:~/p1$ cat sdfile2.txt
poiuukjhshs
tushar@DESKTOP-9QA5R03:~/p1$
```

4. Check the difference between approach used in 2 and 3.

=> one

Hardlink : It is a copy of the original file that serves as a pointer to the same file, allowing it to be accessed even if the original file is deleted or relocated.

Softlink : It is a short pointer file that links a filename to a pathname. It's nothing more than a shortcut to the original file, much like the Windows OS's shortcut

option.

5. Use **ssh** to connect to your friends shell by specifying **port number** in the **ssh** command. use **exit** command to come out of your friends shell.
(Hint: use **ssh** command)

=> Done using EC2 instance

6. Use **scp** using your friend's credentials to copy **file** into a directory **owned by your friend,** inside his home directory, specify port number in **scp** command.

7. Use **scp** using your friend's credentials to copy **directory** into a directory **owned by you**, inside your home directory, specify port number in **scp** command

8. Use **scp** using your friend's credentials to copy **directory** into a directory **owned by you**, inside your home directory, specify port number in **scp** command

9. Connect to any publicly available **ftp** server from terminal and try to download, upload and delete files. If you get error in any process (connect, upload, download or delete), justify the reasons behind them.(Hint: use **ftp** command)
Example:
Try to access **ftp.netbsd.org**
username : **anonymous**
password : **anonymous**