

# 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

```
root@LAPTOP-90SH6300: /Assignment/f1

root@LAPTOP-90SH6300: /# ls
1  a1  boot  home  lib32  lost+found  opt  run  snap  tmp
2  a2  dev   init  lib64  media      proc 's5.txt c'  srv  usr
3  bin  etc   lib  libx32  mnt      root  sbin  sys  var

root@LAPTOP-90SH6300: /# mkdir Assignment
root@LAPTOP-90SH6300: /# ls
1  Assignment  bin  etc  lib  libx32  mnt  root  sbin  sys  var
2  a1          boot  home  lib32  lost+found  opt  run  snap  tmp
3  a2          dev   init  lib64  media      proc 's5.txt c'  srv  usr

root@LAPTOP-90SH6300: /# cd Assignment
root@LAPTOP-90SH6300: /Assignment# mkdir f1
root@LAPTOP-90SH6300: /Assignment# cd f1
root@LAPTOP-90SH6300: /Assignment/f1# pwd
/Assignment/f1
root@LAPTOP-90SH6300: /Assignment/f1#
```

```
root@LAPTOP-90SH6300: /Assignment/f1

root@LAPTOP-90SH6300: /Assignment/f1# ls -l
total 0
-rw-r--r-- 1 root root 0 Mar 10 21:45 sarvesh.txt
root@LAPTOP-90SH6300: /Assignment/f1#
```

```
root@LAPTOP-90SH6300: /assignment

root@LAPTOP-90SH6300: /# ls
1  3  a2  bin  cdac-dir  etc  init  lib32  libx32  media  opt  root  's5.txt c'  snap  sys  usr
2  a1  assignment  boot  dev  home  lib  lib64  lost+found  mnt  proc  run  sbin  srv  tmp  var
root@LAPTOP-90SH6300: /# cd assignment
root@LAPTOP-90SH6300: /assignment# ls
a1  a2
root@LAPTOP-90SH6300: /assignment# touch .sarvesh.txt
root@LAPTOP-90SH6300: /assignment# ls
a1  a2  .sarvesh.txt
root@LAPTOP-90SH6300: /assignment# ls -a
.  ..  .sarvesh.txt  a1  a2
root@LAPTOP-90SH6300: /assignment# ls -ad .*
.  ..  .sarvesh.txt
root@LAPTOP-90SH6300: /assignment#
```

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).

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

```
root@LAPTOP-90SH6300:/cdac-dir# mkdir -p a1/b1
root@LAPTOP-90SH6300:/cdac-dir# mkdir -p a1/b2
root@LAPTOP-90SH6300:/cdac-dir# mkdir -p a2/c1
root@LAPTOP-90SH6300:/cdac-dir# mkdir -p a2/c2
root@LAPTOP-90SH6300:/cdac-dir# tree
.
├── a1
│   ├── b1
│   └── b2
└── a2
    ├── c1
    └── c2

6 directories, 0 files
root@LAPTOP-90SH6300:/cdac-dir#
```

```
directories
oot@LAPTOP-90SH6300:/assignment# cd ..
oot@LAPTOP-90SH6300:/# ls
1 3 a2 bin cdac-dir etc init lib32 libx32 media opt root 's5.txt c' snap sys usr
2 a1 assignment boot dev home lib lib64 lost+found mnt proc run sbin srv tmp var
oot@LAPTOP-90SH6300:/# cd assignment
oot@LAPTOP-90SH6300:/assignment# ls
1 a2 cdac-dir
oot@LAPTOP-90SH6300:/assignment# rm -rf cdac-dir
oot@LAPTOP-90SH6300:/assignment# tree -d
├── a1
│   ├── b1
│   └── c1
└── a2
    ├── b2
    └── c2
```

## 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.

```
root@LAPTOP-90SH6300:/# touch sar.txt
root@LAPTOP-90SH6300:/# ls
1 Assignment bin etc lib libx32 mnt root sar.txt srv usr
2 a1 boot home lib32 lost+found opt run sbin sys var
3 a2 dev init lib64 media proc 's5.txt c' snap tmp
root@LAPTOP-90SH6300:/# man ls
root@LAPTOP-90SH6300:/# man ls >sar.txt
root@LAPTOP-90SH6300:/# cat sar.txt
LS(1) User Commands LS(1)

NAME
    ls - list directory contents

SYNOPSIS
    ls [OPTION]... [FILE]...

DESCRIPTION
    List information about the FILES (the current directory by default). Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

    Mandatory arguments to long options are mandatory for short options too.

    -a, --all
        do not ignore entries starting with .

    -A, --almost-all
        do not list implied . and ..

    --author
        with -l, print the author of each file

    -b, --escape
        print C-style escapes for nongraphic characters

    --block-size=SIZE
        with -l, scale sizes by SIZE when printing them; e.g., '--block-size=M'; see SIZE format below

    -B, --ignore-backups
        do not list implied entries ending with ~
root@LAPTOP-90SH6300:/#
```

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

```
GNU coreutils 8.30                      September 2019
root@LAPTOP-90SH6300:/# touch temp.txt
root@LAPTOP-90SH6300:/# cat > temp.txt
Hii
Hello
Good Night
Good Morning
Good Afternoon
Go
Bye
Getout
abc
hjkkk
llll
ooo
pppap
mother
father
cat
matroot@LAPTOP-90SH6300:/# temp -n 10 temp.txt
temp: command not found
root@LAPTOP-90SH6300:/# head -n 10 temp.txt
Hii
Hello
Good Night
Good Morning
Good Afternoon
Go
Bye
Getout
abc
hjkkk
root@LAPTOP-90SH6300:/# tail -n 10 temp.txt
Getout
abc
hjkkk
llll
ooo
pppap
mother
father
cat
matroot@LAPTOP-90SH6300:/#
```

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

```
matroot@LAPTOP-90SH6300:/# cd ..
root@LAPTOP-90SH6300:/# ls
1  Assignment  bin    etc    lib    libx32  mnt    root    sar.txt  srv    tmp
2  a1          boot   home   lib32  lost+found  opt    run    sbin    sys    usr
3  a2          dev    init   lib64  media   proc    's5.txt c'  snap   temp.txt  var
root@LAPTOP-90SH6300:/# cp temp.txt Assignment
root@LAPTOP-90SH6300:/# cd Assignment
root@LAPTOP-90SH6300:/Assignment# ls
f1 temp.txt
root@LAPTOP-90SH6300:/Assignment# mv temp.txt pratik.txt
root@LAPTOP-90SH6300:/Assignment# ls
f1 pratik.txt
root@LAPTOP-90SH6300:/Assignment#
```

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

```
matroot@LAPTOP-90SH6300:/# cd ..
root@LAPTOP-90SH6300:/# ls
1  Assignment  bin    etc    lib    libx32  mnt    root    sar.txt  srv    tmp
2  a1          boot   home   lib32  lost+found  opt    run    sbin    sys    usr
3  a2          dev    init   lib64  media   proc    's5.txt c'  snap   temp.txt  var
root@LAPTOP-90SH6300:/# cp temp.txt Assignment
root@LAPTOP-90SH6300:/# cd Assignment
root@LAPTOP-90SH6300:/Assignment# ls
f1 temp.txt
root@LAPTOP-90SH6300:/Assignment# mv temp.txt pratik.txt
root@LAPTOP-90SH6300:/Assignment# ls
f1 pratik.txt
root@LAPTOP-90SH6300:/Assignment# wc pratik.txt
16 20 109 pratik.txt
root@LAPTOP-90SH6300:/Assignment# wc -m pratik.txt
109 pratik.txt
root@LAPTOP-90SH6300:/Assignment# wc -l -w pratik.txt
16 20 pratik.txt
root@LAPTOP-90SH6300:/Assignment#
```

5. Use history command to display last 10 commands used.

```
root@LAPTOP-90SH6300:/Assignment# history | head
1  mkdir sarvesh
2  ls
3  rmdir sarvesh
4  ls
5  ncal
6  date
7  mount proc
8  df -h
9  sbin
10 /sbin
root@LAPTOP-90SH6300:/Assignment#
```

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

```
root@LAPTOP-90SH6300: /  
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# gzip sar.txt  
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt.gz sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# gzip -d sar.txt  
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# cat > sar.txt  
Hi  
hello  
good night  
root@LAPTOP-90SH6300: /# gzip sar.txt  
root@LAPTOP-90SH6300: /# grep i sar.txt  
grep: sar.txt: No such file or directory  
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt.gz sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# less sar.txt.gz  
[1]+  Stopped                  less sar.txt.gz  
root@LAPTOP-90SH6300: /#
```

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

```
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt.gz sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# gzip -d sar.txt  
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# ls -l temp.txt  
-rw-r--r-- 1 root root 109 Mar 14 10:35 temp.txt  
root@LAPTOP-90SH6300: /# chmod 777 temp.txt  
root@LAPTOP-90SH6300: /# ls  
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt sbin srv temp.txt usr  
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys tmp var  
root@LAPTOP-90SH6300: /# ls -l temp.txt  
-rwxrwxrwx 1 root root 109 Mar 14 10:35 temp.txt  
root@LAPTOP-90SH6300: /#
```

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

```
root@LAPTOP-90SH6300:/# ls
1 3 a1 bin dev home lib lib64 lost+found mnt proc run sar.txt sbin srv temp.txt usr
2 Assignment a2 boot etc init lib32 libx32 media opt root 's5.txt c' sarvesh snap sys temp var
root@LAPTOP-90SH6300:/# ls -l sar.txt
-rw-r--r-- 1 root root 20 Mar 14 11:49 sar.txt
root@LAPTOP-90SH6300:/# chown sarvesh sar.txt
chown: invalid user: 'sarvesh'
root@LAPTOP-90SH6300:/# chown cdac_kh sar.txt
root@LAPTOP-90SH6300:/# ls -l
total 1468
drwxr-xr-x 2 root root 4096 Mar 9 2022 1
drwxr-xr-x 2 root root 4096 Mar 9 2022 2
drwxr-xr-x 2 root root 4096 Mar 9 2022 3
drwxr-xr-x 3 root root 4096 Mar 14 10:48 Assignment
drwxr-xr-x 3 root root 4096 Mar 10 2022 a1
drwxr-xr-x 3 root root 4096 Mar 10 2022 a2
lrwxrwxrwx 1 root root 7 Feb 16 2022 bin -> usr/bin
drwxr-xr-x 2 root root 4096 Feb 16 2022 boot
drwxr-xr-x 8 root root 2760 Mar 10 2022 dev
drwxr-xr-x 95 root root 4096 Mar 10 2022 etc
drwxr-xr-x 2 root root 4096 Mar 10 2022 home
-rwxr-xr-x 3 root root 1392928 Feb 24 2022 init
lrwxrwxrwx 1 root root 7 Feb 16 2022 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Feb 16 2022 lib32 -> usr/lib32
lrwxrwxrwx 1 root root 9 Feb 16 2022 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 10 Feb 16 2022 libx32 -> usr/libx32
drwx----- 2 root root 16384 Apr 10 2019 lost+found
drwxr-xr-x 2 root root 4096 Feb 16 2022 media
drwxr-xr-x 5 root root 4096 Mar 8 2022 mnt
drwxr-xr-x 2 root root 4096 Feb 16 2022 opt
dr-xr-xr-x 171 root root 0 Mar 10 2022 proc
drwx----- 3 root root 4096 Mar 9 2022 root
drwxr-xr-x 7 root root 140 Mar 10 2022 run
-rw-r--r-- 1 root root 10 Mar 9 2022 's5.txt c'
-rw-r--r-- 1 cdac_kh root 20 Mar 14 11:49 sar.txt
drwxr-xr-x 2 root root 4096 Mar 14 11:40 sarvesh
lrwxrwxrwx 1 root root 8 Feb 16 2022 sbin -> usr/sbin
drwxr-xr-x 6 root root 4096 Feb 16 2022 snap
drwxr-xr-x 2 root root 4096 Feb 16 2022 srv
dr-xr-xr-x 11 root root 0 Mar 10 2022 sys
-rwxrwxrwx 1 root root 109 Mar 14 10:35 temp.txt
drwxrwxrwt 2 root root 4096 Mar 10 2022 temp
drwxr-xr-x 14 root root 4096 Feb 16 2022 usr
drwxr-xr-x 13 root root 4096 Feb 16 2022 var
root@LAPTOP-90SH6300:/#
```

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).

## Question-4.

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

```
root@LAPTOP-90SH6300: /home
root@LAPTOP-90SH6300:/home# date
Thu Mar 10 22:24:16 IST 2022
root@LAPTOP-90SH6300:/home# cal
      March 2022
Su Mo Tu We Th Fr Sa
                1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

root@LAPTOP-90SH6300:/home#
```

2. Change the current date and time of the system to following 14th March 2017, 10:10 AM

```
root@LAPTOP-90SH6300: /home
root@LAPTOP-90SH6300:/home# date -s "14 MARCH 2017 10:10:00"
Tue Mar 14 10:10:00 IST 2017
root@LAPTOP-90SH6300:/home#
```

3. Explore following commands who, whoami, whatis, whereis

```
root@LAPTOP-90SH6300:/Assignment/f1# ls -a
.  ..  sarvesh.txt  sarvesh2.txt
root@LAPTOP-90SH6300:/Assignment/f1# cd ..
root@LAPTOP-90SH6300:/Assignment# cd /home
root@LAPTOP-90SH6300:/home# whoami
root
root@LAPTOP-90SH6300:/home# whereis sarvesh.txt
sarvesh:
root@LAPTOP-90SH6300:/home# whatis ls
ls (1)          - list directory contents
root@LAPTOP-90SH6300:/home#
```