Question 1:

1. **use a command to show the current working directory**

- ```
  root@Helios-300:/home/folder1# pwd
  /home/folder1
  ```

- **list the directory contents in the short and long format**

  ```
  root@Helios-300:/home/folder1# ls -l
  total 4
  -rwxrwxrwx 1 root root 91 Mar 10 12:17 file.txt
  -rw-r--r-- 1 root root  0 Mar  9 11:05 file2.txt
  ```

- **list all files along with hidden files in the current working directory.**

  ```
  root@Helios-300:/home/folder1# ls -a
  .  ..  file.txt  file2.txt
  ```

- **list only hidden files in the directory**

2. **Make a directory and name it as cdac-dir and change the current working directory to the new directory.**

   ```
   root@Helios-300:/home# ls
   cdac_kh  folder1  folder3  folder4
   root@Helios-300:/home# mkdir cdac-dir
   root@Helios-300:/home# ls
   cdac-dir  cdac_kh  folder1  folder3  folder4
   root@Helios-300:/home# cd cdac-dir
   root@Helios-300:/home/cdac-dir# pwd
   /home/cdac-dir
   ```

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

   ```
   mkdir -p abc/pqr/xyz
   ```


   ```

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

```
root@Helios-300:/home# ls
cdac-dir  cdac_kh  folder1  folder3  folder4
root@Helios-300:/home# rmdir cdac-dir
root@Helios-300:/home# ls
cdac_kh  folder1  folder3  folder4
root@Helios-300:/home#
```

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@Helios-300:/home# man ls >>temp.txt
root@Helios-300:/home# cat temp.txt
root@Helios-300:/home# less temp.txt
root@Helios-300:/home# more temp.txt
```

2. **Display the initial 10 lines and final 5 lines of temp.txt with the obvious Linux commands.**

```
root@Helios-300:/home# head -n 10 temp.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 alphabeti-
root@Helios-300:/home# tail -n 10 temp.txt
       Copyright © 2018 Free Software Foundation, Inc.  License
GPLv3+: GNU GPL version  3  or  later
       <https://gnu.org/licenses/gpl.html>.
       This  is  free software: you are free to change and
redistribute it.  There is NO WARRANTY, to
       the extent permitted by law.

SEE ALSO
       Full documentation at:
<https://www.gnu.org/software/coreutils/ls>
       or available locally via: info '(coreutils) ls invocation'
GNU coreutils 8.30                             September 2019
LS(1)
```

3. **Copy temp.txt to another directory and rename it there.**

```
root@Helios-300:/home# ls
cdac_kh  folder1  folder3  folder4  temp.txt
root@Helios-300:/home# cp temp.txt /home/folder3
root@Helios-300:/home# cd folder3
root@Helios-300:/home/folder3# ls
temp.txt
root@Helios-300:/home/folder3# mv temp.txt new.txt
root@Helios-300:/home/folder3# ls
new.txt
```

4. **Display the number of lines, words and characters in file using Linux command**

```
root@Helios-300:/home/folder3# wc new.txt
229  948 8009 new.txt
root@Helios-300:/home/folder3# wc -m new.txt
7994 new.txt
root@Helios-300:/home/folder3# wc -w new.txt
948 new.txt
root@Helios-300:/home/folder3# wc -l new.txt
229 new.txt
```

(**-m:** count characters, **-w:** count words, **-l:** count lines)

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

```
root@Helios-300:/home# history | tail -n 10
26  cd cdac-dir
27  pwd
28  cd ..
29  tree
30  apt install tree
31  ls
32  rmdir cdac-dir
33  ls
34  history tail -n 10
35  history | tail -n 10
```

Question-3.

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

```
root@Helios-300:/home/folder1# ls
file.txt  file2.txt
root@Helios-300:/home/folder1# tar -cf file.tar file.txt
root@Helios-300:/home/folder1# ls
file.tar  file.txt  file2.txt
```

   - **list the contents of the archive file without extracting.**

```
root@Helios-300:/home/folder1# tar tf file.tar
file.txt
```

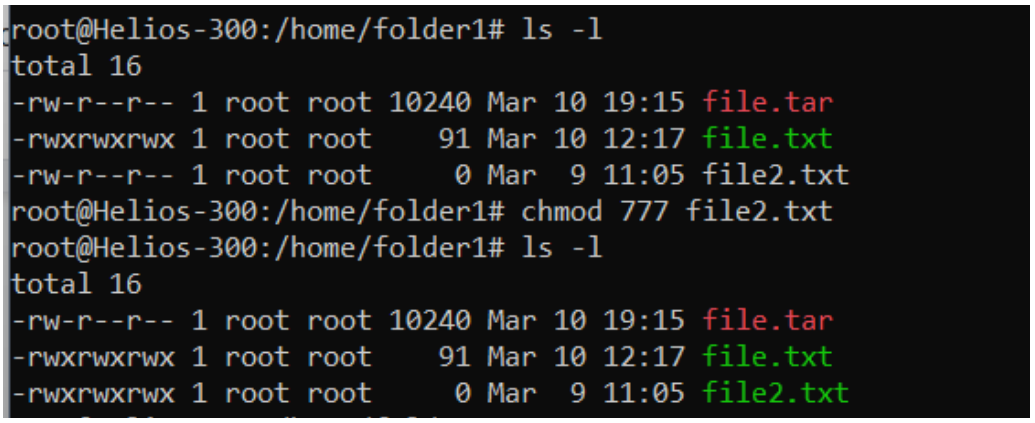
2. **Create a zip file of another directory.**

```
root@Helios-300:/home/folder4# ls
file.txt
root@Helios-300:/home/folder4# gzip file.txt
root@Helios-300:/home/folder4# ls
file.txt.gz
```

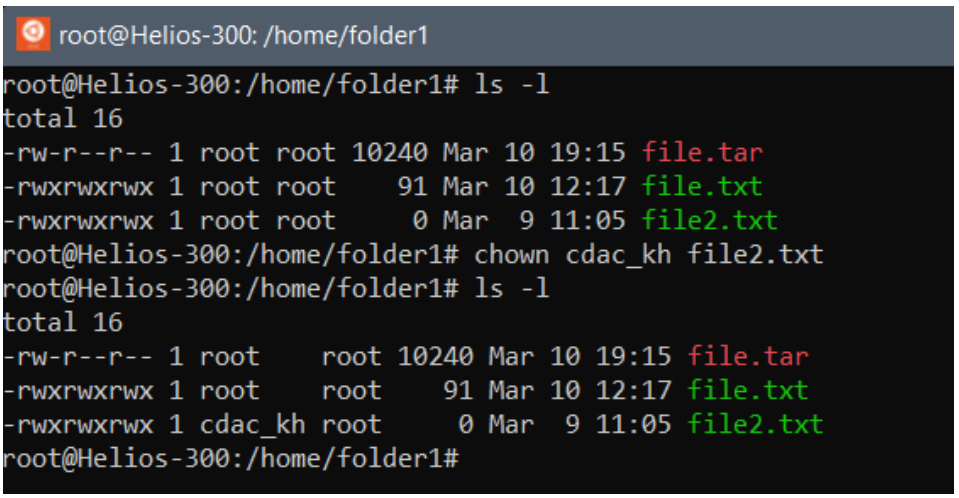
   - **list the contents of the zip file without extracting.**

```
root@Helios-300:/home/folder4# zcat file.txt
This file is opened in Ubuntu.
Use zcat command to list contents of file.
1
2
3
4
5
The END
```

3. **Give read, write & execute permissions to your file.**



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



5. **List processes running in shell, all running processes and show top processes in decreasing order of their resource utilization.**

```
root@Helios-300:/home/folder1# ps
  PID TTY          TIME CMD
   22 pts/0    00:00:00 sudo
   23 pts/0    00:00:00 su
   24 pts/0    00:00:00 bash
  413 pts/0    00:00:00 ps
```

```
root@Helios-300:/home/folder1# top
top - 19:44:26 up  2:24,  0 users,  load average: 0.00, 0.00, 0.00
Tasks:   8 total,   1 running,   7 sleeping,   0 stopped,   0 zombie
%Cpu(s):  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   7869.7 total,   7672.6 free,    104.8 used,     92.2 buff/cache
MiB Swap:   2048.0 total,   2048.0 free,      0.0 used.   7589.8 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
    1 root      20   0    1832   1128   1020 S   0.0   0.0   0:00.04 init
    7 root      20   0    1752     72      0 S   0.0   0.0   0:00.00 init
    8 root      20   0    1752     80      0 S   0.0   0.0   0:00.35 init
    9 cdac_kh   20   0   10040   4924   3220 S   0.0   0.1   0:00.03 bash
   22 root      20   0   11288   4580   3896 S   0.0   0.1   0:00.00 sudo
   23 root      20   0    9988   3724   3304 S   0.0   0.0   0:00.00 su
   24 root      20   0    8964   3896   3280 S   0.0   0.0   0:00.21 bash
  412 root      20   0   10876   3644   3132 R   0.0   0.0   0:00.01 top
```

Question-4.

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

```
root@Helios-300:/home/folder1# date
Thu Mar 10 19:47:59 IST 2022
root@Helios-300:/home/folder1# 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
```

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

```
root@Helios-300:/home/folder1# date -s "14 MARCH 2017 10:10:00"
Tue Mar 14 10:10:00 IST 2017
root@Helios-300:/home/folder1# date
Tue Mar 14 10:10:08 IST 2017
```

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

```
root@Helios-300:/home/folder1# whoami
root
root@Helios-300:/home/folder1# whatis ls
ls (1)               - list directory contents
root@Helios-300:/home/folder1# whereis file.txt
file: /usr/bin/file /usr/lib/file /usr/share/file
/usr/share/man/man1/file.1.gz
```