

## Linux Commands

Experiment No : 1

Aim :- To study basic Linux commands

Theory :

### Linux Commands

- 1) date: Display the current date and time.
- 2) tput clear: Clear the terminal screen.
- 3) cal: Display the calendar for the current month.
- 4) cal year: Display the calendar for the entire year.
- 5) cal <month> <year>: Display the calendar for a specific month and year.
- 6) who: Show who is logged into the system.
- 7) whoami: Display the current user's username.
- 8) ps: List currently running processes.
- 9) ls: List files and directories in the current directory.
  - ls -l: List files and directories in long format.
  - ls > filename : redirects the output of the "ls" command, which lists files and directories in the current directory, to a specified filename, creating or overwriting the file if it exists.
- 10) cat file\_name : Display the contents of a file
- 11) cat >filename: Create or overwrite a file's content.
- 12) cat >>filename: Append to a file's content.
- 13) wc file\_name: Count lines, words, and characters in a file.
- 14) uname: Display system information.
- 15) tty: Display the terminal file name.
- 16) pwd: Print the current working directory.
- 17) echo "Text": Print text to the terminal.
- 18) printf: Format and print text.
  - printf "Hello, %s!\n" "name"
- 19) bc: Command-line calculator.

20) passwd: Change user password.

21) stty: used to control and configure terminal settings

22) rm file: Remove files or directories.

23) mv : Move or rename files or directories.

- mv <source> <destination>
- mv <old\_name> <new\_name>

24) cmp: Compare two files byte by byte.

- cmp <file1> <file2>

25) comm: Compare two sorted files line by line.

- comm <file1> <file2>

26) diff: Display differences between two files.

- diff <file1> <file2>

27) mkdir: Create a new directory.

- mkdir <directory\_name>

28) rmdir: Remove an empty directory.

- rmdir <directory\_name>

29) cd <directory>: Change the current directory.

30) cd : without any attributes is used to change the working directory to the user's home directory.

31) cd .. : Move to the parent directory.

32) tree: Display directory structure as a tree.

33) chmod: Change file permissions.

- chmod <permissions> <file\_name>

i. Relative Permissions (Symbolic): The chmod command with symbolic notation modifies file permissions based on user, group, and others using symbols like + (add), - (remove), and = (set).

- chmod u+x file.txt (Add execute permission for the user)
- chmod go-rw file.txt (Remove read and write permissions for group and others)
- chmod a=rwx file.txt (Set read, write, and execute permissions for all)

- ii. Absolute Permissions (Numeric): The chmod command with numeric notation assigns permissions using a three-digit octal code (e.g., 755) where each digit corresponds to user, group, and others, representing read (4), write (2), and execute (1).
  - chmod 644 file.txt (Read and write for user, read for group and others)
  - chmod 755 script.sh (Read, write, and execute for user, read and execute for group and others)
  - chmod 600 private.txt (Read and write for user, no permissions for others)

Output :

```
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ script diggaj
Script started, output log file is 'diggaj'.
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ date
Sunday 13 August 2023 12:59:50 PM IST
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cal
      August 2023
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

diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cal 9 2023
      September 2023
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

diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cal 2023
                2023
      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
```

```
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ who
diggaj    tty2                2023-08-13 12:50 (tty2)
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ whoami
diggaj
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ps
  PID TTY          TIME CMD
  3215 pts/1    00:00:00 bash
  3229 pts/1    00:00:00 ps
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls
diggaj
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls -l
total 4
-rw-rw-r-- 1 diggaj diggaj 4096 Aug 13 13:00 diggaj
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls >file1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat file1
diggaj
file1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat >file2
i am studying in gec
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat file2
i am studying in gec
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat >>file2
Ponda Goa
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat file2
i am studying in gec
Ponda Goa
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ wc file2
  2  7 31 file2
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ wc -w
file2
1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ wc -w file2
7 file2
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ wc -l file2
2 file2
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ wc -c file2
31 file2
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ uname
Linux
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ tty
/dev/pts/1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ pwd
/home/diggaj/Desktop/Codes/Diggaj
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ echo "Hello"
Hello
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ printf "Hello, %s" "Diggaj"
Hello, Diggajdiggaj@ubuntu-test:~/Desktop/Codes/Diggaj$
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ bc
bc 1.07.1
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e Foundation, Inc.
This is free software with ABSOLUTELY NO WARRANTY.
For details type `warranty'.
8*9
72
5+5
10
80/8
10
```

```

diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ passwd
Changing password for diggaj.
Current password:
\New password:
Retype new password:
passwd: password updated successfully
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ stty
speed 38400 baud; line = 0;
-brkint -imaxbel iutf8
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ rm file1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls
diggaj file2
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ mv file2 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls
diggaj f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat >f2
Ponda Goa
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat >f3
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cp f2 f3
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cat f3
Ponda Goa
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cmp f2 f3
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cmp f1 f2
f1 f2 differ: byte 1, line 1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ diff f1 f2
1d0
< i am studying in gec
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ comm f1 f2
i am studying in gec
Ponda Goa
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ mkdir assignment
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ cd assignment
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj/assignment$ cd ..
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ rmdir assignment
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls
diggaj f1 f2 f3
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls -l f1
-rw-rw-r-- 1 diggaj diggaj 31 Aug 13 13:01 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ chmod u+x f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ chmod u+x f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls -l f1
-rwxrw-r-- 1 diggaj diggaj 31 Aug 13 13:01 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ chmod ugo+x f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls -l f1
-rwxrwxr-x 1 diggaj diggaj 31 Aug 13 13:01 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ chmod g-w f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls -l f1
-rwxr-xr-x 1 diggaj diggaj 31 Aug 13 13:01 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ chmod 761 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ ls -l f1
-rwxrw---x 1 diggaj diggaj 31 Aug 13 13:01 f1
diggaj@ubuntu-test:~/Desktop/Codes/Diggaj$ 

```

**Conclusion :** Basic Linux commands were studied and implemented successfully.