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
```

```
      October               November              December
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
 8  9 10 11 12 13 14   5  6  7  8  9 10 11   3  4  5  6  7  8  9
15 16 17 18 19 20 21  12 13 14 15 16 17 18  10 11 12 13 14 15 16
22 23 24 25 26 27 28  19 20 21 22 23 24 25  17 18 19 20 21 22 23
29 30 31              26 27 28 29 30        24 25 26 27 28 29 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
Copyright 1991-1994, 1997, 1998, 2000, 2004, 2006, 2008, 2012-2017 Free Softwar
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$
```

```
diggaj@ubuntu-test:~/Desktop/Codes/Assignment$ tree
.
└── GEC
    ├── CIVIL
    │   ├── BE
    │   ├── SE
    │   └── TE
    ├── COMP
    │   ├── BE
    │   ├── SE
    │   └── TE
    │       ├── AI
    │       ├── DBMS
    │       └── OS
    │           ├── Assignment
    │           │   ├── assign1
    │           │   ├── assign2
    │           │   ├── assign3
    │           │   └── assign4
    │           └── Expt
    │               ├── expt1
    │               ├── expt10
    │               ├── expt2
    │               ├── expt3
    │               ├── expt4
    │               ├── expt5
    │               ├── expt6
    │               ├── expt7
    │               ├── expt8
    │               └── expt9
    ├── ENE
    │   ├── Internship
    │   │   └── file3
    │   └── Project
    │       ├── file1
    │       └── file2
    ├── ETC
    ├── IT
    └── MECH

20 directories, 17 files
```

Conclusion : Basic Linux commands were studied and implemented successfully.