EXPERIMENT 1 **DATE –**

LINUX COMMANDS

Aim – To implement basic linux commands .

THEORY –

The Linux Command Line Interface (CLI) allows users to interact directly with the operating system by typing text commands. Unlike the graphical user interface (GUI), the CLI provides more flexibility, power, and control. It is widely used by system administrators, developers, and advanced users for tasks like file manipulation, process management, user administration, and system monitoring. The CLI makes it possible to automate tasks, write shell scripts, and manage the system efficiently.

Basic Linux CLI Commands

i] **pwd** – Prints the current working directory.
Syntax – pwd
Example – pwd → /home/user/Documents

ii] **ls** – Lists files and directories in the current directory.
Syntax – ls [options] [directory]
Example – ls -l → shows details in long format.

iii] **cd** – Changes the current directory.
Syntax – cd [directory_name]
Example – cd /home/user/Desktop

iv] **mkdir** – Creates a new directory.
Syntax – mkdir [directory_name]
Example – mkdir projects

v] **rmdir** – Removes an empty directory.
Syntax – rmdir [directory_name]
Example – rmdir old_folder

vi] **rm** – Removes files or directories.
Syntax – rm [options] [file_name]
Example – rm file.txt or rm -r folder/

vii] **touch** – Creates an empty file or updates file timestamps.
Syntax – touch [file_name]
Example – touch notes.txt

viii] **cat** – Displays the content of a file.
Syntax – cat [file_name]
Example – cat file.txt

ix] **cp** – Copies files or directories.
Syntax – cp [source] [destination]
Example – cp file.txt /home/user/Desktop/

x] **mv** – Moves or renames files/directories.
Syntax – mv [source] [destination]
Example – mv file.txt newname.txt

xi] **head** – Displays the first few lines of a file (default 10).
Syntax – head [file_name]
Example – head -5 file.txt

xii] **tail** – Displays the last few lines of a file (default 10).
Syntax – tail [file_name]
Example – tail -n 20 file.txt

xiii] **man** – Displays manual/help for a command.
Syntax – man [command]
Example – man ls

xiv] **clear** – Clears the terminal screen.
Syntax – clear
Example – clear

xv] **date** – Displays or sets the system date and time.
Syntax – date
Example – date "+%d-%m-%Y %H:%M:%S"

xvi] **cal** – Displays the calendar.
Syntax – cal [month] [year]
Example – cal 08 2025

xvii] **whoami** – Displays the current logged-in user.
Syntax – whoami
Example – whoami → atharv

xviii] **uname** – Displays system information.
Syntax – uname [options]
Example – uname -a

xix] **echo** – Prints a line of text.
Syntax – echo [text]
Example – echo "Hello World"

xx] **history** – Shows the list of previously executed commands.
Syntax – history
Example – history | grep ls

xxi] **find** – Searches for files/directories.
Syntax – find [path] -name [filename]
Example – find /home -name notes.txt

xxiii] **wc** – Word, line, and byte count.
Syntax – wc [file]
Example – wc -l file.txt

xxiv] **df** – Shows disk space usage.
Syntax – df [options]
Example – df -h

xxv] **du** – Shows directory space usage.
Syntax – du [options] [directory]
Example – du -sh /home/user

xxvi] **ps** – Shows running processes.
Syntax – ps [options]
Example – ps aux

xxvii] **kill** – Kills a running process.
Syntax – kill [PID]
Example – kill 1234

xxviii] **chmod** – Changes file permissions.
Syntax – chmod [permissions] [file]
Example – chmod 755 script.sh

xxviii] **chown** – Changes file ownership.
Syntax – chown [owner] [file]
Example – chown user:group file.txt

xxix] **exit** – Closes the terminal session.
Syntax – exit
Example – exit

```
root@Atharv:~/Atharv$ date
Wed Aug 20 17:48:03 UTC 2025
root@Atharv:~/Atharv$ cal
    August 2025
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@Atharv:~/Atharv$ cal June 2005
     June 2005
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

root@Atharv:~/Atharv$ who
root     pts/1        2025-08-20 17:39
root@Atharv:~/Atharv$ whoami
root
root@Atharv:~/Atharv$ tty
/dev/pts/0
root@Atharv:~/Atharv$ ps
    PID TTY          TIME CMD
    301 pts/0    00:00:00 bash
    427 pts/0    00:00:00 ps
root@Atharv:~/Atharv$ cat file1.txt
Hello world ,I am Atharv
root@Atharv:~/Atharv$ cat>file2.txt
Hello,Soy Atharv Govekar
^C
root@Atharv:~/Atharv$ cat file2.txt>file3.txt
root@Atharv:~/Atharv$ cat>file3.txt
^C
root@Atharv:~/Atharv$ cat file2.txt>file3.txt
root@Atharv:~/Atharv$ cat file3.txt
Hello,Soy Atharv Govekar
root@Atharv:~/Atharv$ cp file1.txt file4.txt
root@Atharv:~/Atharv$ cat file4.txt
Hello world ,I am Atharv
root@Atharv:~/Atharv$ cmp file1.txt file2.txt
file1.txt file2.txt differ: byte 6, line 1
```

```
root@Atharv:~/Atharv$ rm file4.txt
root@Atharv:~/Atharv$ ls
file.txt  file1.txt  file2.txt  file3.txt
root@Atharv:~/Atharv$ wc file2.txt
 1  3 25 file2.txt
root@Atharv:~/Atharv$ pwd
/root/Atharv
root@Atharv:~/Atharv$ diff file1.txt file2.txt
1c1
< Hello world ,I am Atharv
---
> Hello,Soy Atharv Govekar
root@Atharv:~/Atharv$ comm file1.txt file3.txt
Hello world ,I am Atharv
        Hello,Soy Atharv Govekar
```

```
root@Atharv:~/Atharv/Exp1$ tree GEC
GEC
├── CIVIL
├── COMP
│   ├── BE
│   ├── FE
│   ├── SE
│   └── TE
│       ├── CLIPR
│       ├── DBMS
│       ├── GB
│       ├── JAVA
│       ├── OS
│       │   ├── CLASS
│       │   └── LAB
│       │       └── file1.txt
│       └── WT
├── ENE
├── ETC
├── IT
├── MECH
├── MINING
└── VLSI

21 directories, 1 file
```

```
root@Atharv:~/Atharv$ ls -l file1.txt
-rw-r--r-- 1 root root 25 Aug 20 17:47 file1.txt
root@Atharv:~/Atharv$ chmod 756 file1.txt
root@Atharv:~/Atharv$ ls -l file1.txt
-rwxr-xrw- 1 root root 25 Aug 20 17:47 file1.txt
root@Atharv:~/Atharv$ chmod u+x,o+x file1.txt
root@Atharv:~/Atharv$ ls -l file1.txt
-rwxr-xrwx 1 root root 25 Aug 20 17:47 file1.txt
```

CONCLUSION –

Command Line Interface (CLI) provides a fast and efficient way to interact with the operating system using commands. Mastering these basic commands builds a strong foundation for system navigation, file handling, and process management.