Lab Manual: Basic Linux/Unix and Git Commands

# Aim

To practice and understand basic Linux/Unix terminal commands including file operations, navigation, and Git/GitHub commands for version control.

# Procedure

1. Open your Linux terminal or command line interface.  
2. Try each command listed below in sequence.  
3. Observe the behavior/output of each command.  
4. Make notes on what each command does and how it could be useful in real-world tasks.  
5. Use GitHub to push code changes and practice version control.

# Expected Results

Students should be able to navigate directories, manage files, and perform basic Git operations such as committing changes and pushing them to a remote GitHub repository.

# Basic Linux/Unix Terminal Commands

1. pwd - Prints current working directory

2. ls - Lists files and directories

3. cd [directory] - Changes directory

4. mkdir [dir\_name] - Creates new directory

5. rmdir [dir\_name] - Deletes an empty directory

6. touch [file\_name] - Creates an empty file

7. rm [file\_name] - Deletes a file

8. cp [source] [destination] - Copies a file or directory

9. mv [source] [destination] - Moves or renames a file or directory

10. cat [file\_name] - Displays file contents

11. nano [file\_name] - Opens file in nano text editor

12. echo "text" > file - Writes text into a file

13. man [command] - Shows manual for command

14. history - Displays command history

15. clear - Clears the terminal screen

16. whoami - Displays the current username

17. chmod +x [file\_name] - Makes file executable

18. ps - Lists running processes

19. top - Displays system resource usage

20. df -h - Shows disk space usage

21. du -sh [folder] - Shows folder size

22. ifconfig or ip a - Shows IP address info

23. ping [host] - Pings a host

24. grep 'text' [file] - Searches for text in file

25. find . -name "\*.txt" - Finds all .txt files

26. tar -czvf archive.tar.gz folder - Archives/compresses folder

27. unzip archive.zip - Extracts a ZIP file

28. exit - Closes the terminal session

29. alias cls='clear' - Creates shortcut command

30. uname -a - Displays system info

# Git and GitHub Commands

31. git --version - Checks Git version

32. git config --global user.name "Your Name" - Sets Git username

33. git config --global user.email "you@example.com" - Sets Git email

34. git init - Initializes Git repository

35. git status - Shows status of repo

36. git add filename - Stages specific file

37. git add . - Stages all files

38. git commit -m "message" - Commits with message

39. git log - Shows commit history

40. git remote add origin [URL] - Adds GitHub remote

41. git branch - Lists branches

42. git branch -M main - Renames current branch to main

43. git push -u origin main - Pushes to GitHub

44. git pull - Pulls from GitHub

45. git clone [URL] - Clones a repository

# Viva Questions

1. What is the difference between 'cd' and 'ls'?
2. How do you create a new file using terminal?
3. What does 'git init' do?
4. How do you push a project to GitHub?
5. What is the use of 'chmod' command?
6. Explain the role of 'git commit'.
7. What command shows your Git username and email?
8. How do you copy and rename a file using terminal?
9. How do you search for a word in a file using terminal?
10. How is 'git clone' different from 'git pull'?