

AIM OF THE EXPERIMENT:-

To study about the basics of UNIX. To study of various UNIX editors such as vi, ed, ex, nano and EMACS.

UNIX:-

It is a multi-user operating system. Developed at AT & T Bell Industries, USA in 1969. Ken Thomson along with Dennis Ritchie developed it from MULTICS (Multiplexed Information and Computing Service) OS. By 1980, UNIX had been completely rewritten using C language.

All the UNIX / LINUX commands are classified into 4 groups:

1. Basic Utility or General information command.
2. Directory and File related command.
3. Process related command.
4. Network related command.

1. Basic Utility or General information command

Name:- clear

Purpose:- To clear the display screen

Syntax:- clear

Example:- clear <Enter>

Name:- cal

Purpose:- To display calendar from the shell

Syntax:- cal [month] [year]

Example:- cal

cal 10 2023

cal 2024

cal -3 1 2023

Name:- date

Purpose:- To display date from the shell

Syntax:- date

Example:- date

date +%D %T

date --date="2 years ago"

date --date="yesterday"

date --date="2 month ago"

date --date="10 day ago"
date --date="next day"
date --date="next wed"
date --date="2 day"
date +"Year: %y, Month: %m, Day: %d"

Name:- echo

Purpose:- To display any text message

Syntax:- echo "text"

Example:- echo "WELCOME TO CGU"

Name:- man

Purpose:- To display manual for a command

Syntax:- man <command_name>

Example:- man cd
man man

Name:- who

Purpose:- To get all information of current user

Syntax:- who

Example:- who <Enter>

Name:- whoami

Purpose:- To get details of current user and system

Syntax:- whoami

Example:- whoami <Enter>

Name:- tty

Purpose:- To give terminal info.

Syntax:- tty

Example:- tty <Enter>

Name:- whatis

Purpose:- To get information about any command

Syntax:- whatis <command_name>

Example:- whatis tty

Name:- printf

Purpose:- To print any programming statement

Syntax:- printf "text"

Example:- printf “WELCOME TO CSE\n”

Name:- version

Purpose:- To get details of the server

Syntax:- version

Example:- version <Enter>

Name:- history

Purpose:- To get details of what you have done

Syntax:- history

Example:- history <Enter>

Name:- uname

Purpose:- To get operating system name

Syntax:- uname

Example:- uname <Enter>

Name:- ps

Purpose:- To get terminal information to process

Syntax:- ps

Example:- ps <Enter>

Name:- bc

Purpose:- To active calculator

Syntax:- bc <Enter> <Expression>

Example:- bc <Enter>

10 + 5

10 * 10 + 2 - 6

Scale=2 [15/2] (prints the value up to 2 decimal places)

ibase=2 [110110] (prints the decimal value)

2. Directory related commands

Name:- mkdir

Purpose:- To create or to make directory

Syntax:- mkdir <dirname>

Example:- mkdir cgu

mkdir cse os ankur (3 folders will be created)

mkdir cse gr3 (creates gr3 folder inside cse)

Name:- cd

Purpose:- To change directory

Syntax:- cd <dirname>

Example:- cd cse

cd.. (to go to parent directory)

cd/ (to go to root directory)

cd ../.. (to go to grand parent)

Name:- pwd

Purpose:- To get present working directory

Syntax:- pwd

Example:- pwd <enter>

Name:- rmdir

Purpose:- To delete or remove empty directory

Syntax:- rmdir <dirname>

Example:- rmdir CGU

Name:- rm

Purpose:- To delete or remove a directory

Syntax:- rm <dirname>

Example:- rm cse

Name:- mv

Purpose:- To rename the directory

Syntax:- mv <dirname> <newname>

Example:- mv os os_sessional

Name:- ls

Purpose:- To get details of all directories

Syntax:- ls

Example:- ls <Enter>

3. File related commands

Name:- touch

Purpose:- To create blank file with zero size memory

Syntax:- touch file1

touch file2 file3 file4 (multiple empty files will be created)

Example:- touch ankur.txt

Name:- cat>

Purpose:- To create file with size

Syntax:- cat>filename.txt

Example:- cat>demo.txt <Enter>

 Type some text press ctrl +z

Name:- cat

Purpose:- To display file contents

Syntax:- cat filename.txt

Example:- cat demo.txt

 cat demo.txt>demo1.txt (copying the contents)

 cat demo.txt demo1.txt>>demo2.txt

Name:- cp

Purpose:- To copy file contents

Syntax:- cp <source file> <destination file>

Example:- cp demo.txt chicken.txt

 cp -i demo.txt paneer.txt (needs confirmation)

Name:- mv

Purpose:- To rename a file

Syntax:- mv <file name> <new name>

Example:- mv chicken.txt biriyani.txt

Name:- rm

Purpose:- To delete file permanently

Syntax:- rm filename

Example:- rm biriyani.txt

 rm -i paneer.txt (requires permission)

 rm -*

 rm -*.txt

 rm -??? (file name having three words)

Name:- wc

Purpose:- To count no of lines, words and characters

Syntax:- wc filename

Example:- wc demo.txt <Enter>

 wc -l demo.txt (for lines)

 wc -w demo.txt (for word)

 wc -c demo.txt (for characters)

Name:- more

Purpose:- To display file contents with paging

Syntax:- more <filename>

Example:- more demo.txt

Name:- lp

Purpose:- To print the file

Syntax:- lp <filename>

Example:- lp demo.txt

Name:- cancel

Purpose:- To cancel print the file

Syntax:- cancel <filename>

Example:- cancel demo.txt <Enter>

Name:- head

Purpose:- To view number of lines from beginning of the file

Syntax:- head -n filename

Example:- head -2 demo.txt

head -v -2 demo.txt (with header)

Name:- tail

Purpose:- To view number of lines from bottom of the file

Syntax:- tail -n filename

Example:- tail -2 demo.txt

tail -v -2 demo.txt (with header)

Name:- comm

Purpose:- To display common text between 2 files

Syntax:- comm file1 file2

Example:- comm demo.txt demo1.txt

Name:- cmp

Purpose:- To compare between 2 files

Syntax:- cmp file1 file2

Example:- cmp demo.txt demo1.txt

Name:- sort

Purpose:- To sort file content

Syntax:- sort filename
Example:- sort demo.txt

Name:- grep
Purpose:- To search any word from the file
Syntax:- grep "text" filename
Example:- grep "CGU" demo.txt

Name:- alias
Purpose:- To change any pattern name / command name
Syntax:- alias <command_name> <new_name>
Example:- alias cat dog

Name:- halt
Purpose:- To power off the system
Syntax:- halt
Example:- halt <Enter>

4. Process related commands

Name:- ps
Purpose:- Process status shows the processes of the current shell
Syntax:- ps [options]
Example:- ps

ps -f	(Displays in full format)
ps -F	(Displays extended full format)
ps -e	(Displays all process, regardless of user or terminal)
ps -ef	(Full listing of all processes, including environment details)
ps sleep	(Delay all process for a specified amount of time)
ps aux	(List all processes for all users with detailed information)
ps -g group_id	(View process belongs to specified group)

Name:- top
Purpose:- Launch the dynamic real-time process monitor
Syntax:- top
Example:- top <Enter>

Name:- tty
Purpose:- Determine the terminal associated with a process
Syntax:- tty [option]

Example:- tty <Enter>

Name:- kill

Purpose:- To send a signal to a process or group to behave according to the signal.

Syntax:- kill [signal] PID

Example:- kill -SIGTERM 1437

5. Network related commands

Name:- ifconfig

Purpose:- Display information about network interfaces

Syntax:- ifconfig

Example: ifconfig <Enter>

Name:- ping

Purpose:- Send ICMP echo request packets to a host

Syntax:- ping [host_name or ip]

Example:- ping www.example.com <Enter>

Name:- ftp

Purpose:- Connect to an FTP server

Syntax:- ftp <ftp_server>

Example:- ftp ftp.example.com <Enter>

Name:- telnet

Purpose:- For interactive communication with another host using TELNET protocol

Syntax:- telnet <host> <port>

Example:- telnet example.com 80

Name:- netstat

Purpose:- Display network statistics and active connections

Syntax:- netstat -a

Example:- netstat -a <Enter>

Name:- mount

Purpose:- Mount a file system in one big tree, the file hierarchy.

Syntax:- sudo mount <device> <mount_point>

Example:- sudo mount /ankur/cgu /cse/os <Enter>

Name:- traceroute

Purpose:- Helps to locate where traffic slows down between the source and destination.

Syntax:- traceroute <host_name or ip>

Example:- traceroute www.example.com <Enter>

Name:- nslookup

Purpose:- Look up for domain name or IP address information

Syntax:- nslookup <domain_name or ip>

Example:- nslookup www.example.com <Enter>

Name:- su

Purpose:- Runs a command with substitute user and group ID

Syntax:- su <username>

Example:- su ankur775 <Enter>

Name:- sudo

Purpose:- Execute a command with superuser privileges

Syntax:- sudo <command>

Example:- sudo nano /etc/hosts <Enter>

Name:- chown

Purpose:- Change ownership of a file or directory

Syntax:- sudo chown <new_owner>:<new_group> <file or directory>

Example:- sudo chown newuser:newgroup myfile.txt <Enter>

Name:- free

Purpose:- Display system memory usage

Syntax:- free -h

Example:- free -h <Enter>

Name:- uptime

Purpose:- Display system uptime and load averages

Syntax:- uptime

Example:- uptime <Enter>

Name:- tar (compression)

Purpose:- Create a compressed archive

Syntax:- tar -czvf <archive_name.tar.gz> <file or directory>

Example:- tar -czvf myfiles.tar.gz mydirectory <Enter>

Name:- link (Soft Link)

Purpose:- Create a symbolic (soft) link

Syntax:- `ln -s <target_file> <link_name>`

Example:- `ln -s original.txt shortcut.txt <Enter>`

Name:- link (Hard Link)

Purpose:- Create a hard link

Syntax:- `ln <target_file> <link_name>`

Example:- `ln original.txt hardlink.txt <Enter>`