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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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1.Introduction:

1.1 Alias and Grep:

An alias allows a string to be substituted for a word when it is used as the first word of a simple command (linux, 2025). The shell maintains a list of aliases that may be set and unset with the alias and unalias built-in commands. Issue the alias without options to display a list of aliases known to the current shell (linux, 2025).

The grep command is one of the most useful tools in Linux and Unix systems (geeksforgeeks, 2025). It is used to search for specific words, phrases, or patterns inside text files, and shows the matching lines on your screen (geeksforgeeks, 2025). Grep Command is useful when you need to quickly find certain keywords or phrases in logs or documents (geeksforgeeks, 2025).

1.2 Workshop Task:

On going workshop task, students are involves creating directories and files, searching text using grep, managing aliases, and using command history. It helps students understand UNIX file system, text processing, command shortcuts and efficient commands reuse through practical hands-on exercise.

1.3 Aim and Objective:

The aim of this workshop is to develop practice skills in using basic UNIX utilities and shell features, including directory management, file creation, text searching with grep, alias creation, and command history handling.

Objectives:

- To create and navigate directory structure using relative pathnames.
- To create and manage text file using UNIX commands.
- To understand and apply the grep command with different options for pattern matching.
- To use command history feature to view and re-execute previous executed commands.
- To improve familiarity with common UNIX command-line operation.

2. Commands with Explanation:

A) Create the directory structure presented in the figure below.

The mkdir command is to creates the directory W8,8cat-grep and txt.file tasta, tastb. As you can see directory in tree.

```
prabin-pdhn@pp:~/W8/8cat-grep$ cd
prabin-pdhn@pp:~$ tree W8
W8
└── 8cat-grep
    ├── testa
    └── testb

4 directories, 0 files
prabin-pdhn@pp:~$
```

Figure 1: Create Directory

B) Change to the 8cat-grep directory by one step using a relative pathname.

The cd command is used to change one step directory back as the relative pathname.

```
prabin-pdhn@pp:~/W8$ cd 8cat-grep
prabin-pdhn@pp:~/W8/8cat-grep$ cd
prabin-pdhn@pp:~$
```

Figure 2: Relative Path

C) Using the cat utility, create two files

The cat > command is used to make two files and it also enable file.txt to write.

```
prabin-pdhn@pp:~$ cat > testa
Kkkll
lllmm
oo-oo
mmmdd
dddkk
^C
```

```
prabin-pdhn@pp:~$ cat > testb
KKKKK
LLLLL
MMMMM
DDDDD
^C
prabin-pdhn@pp:~$
```

Figure 3: Created Two Files

D) Give the following commands and explain the results for yourself

● grep ll testa

The grep ll testa command shows line in the file testa that contain ll. As you can see in the screenshot.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep ll testa
Kkkkll
lllmm
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 4:Contain ll line

● grep -v ll testa

The grep -v ll testa command shows line that do not contain ll in the txt.file.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -v ll testa
oo-oo
mmmdd
dddkk
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 5:Not containing ll line

● grep -n ll testa

The grep -n ll testa command show matching lines with their line number.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -n ll testa
1:Kkkkll
2:lllmm
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 6:Matching lines

● grep -l ll *

The grep -l ll * command show the name of files that contain ll. As you can see in the screenshot.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -l ll *
testa
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 7: ll File Name

● grep -i ll *

The grep -l ll * command searchs for ll without caring about uppercase or lowercase letters. As you can see in the screenshot.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -i ll *
testa:Kkkkll
testa:llmm
testb:LLLLL
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 8: Search Letters

● grep -i LL *’

The grep -l LL command shows uppercase letter. As you can see in the screenshot.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -i LL *
testa:Kkkkll
testa:llmm
testb:LLLLL
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 9: Uppercase Letter

● grep -c ll *

The grep -c ll * counts how many lines contain ll in each file. As you can see in the screenshot.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -c ll *
testa:2
testb:0
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 10: Counts line

● grep '^K' testa testb

The grep '^K' testa, testb command shows lines that start with the letter K in the files. As you can see in the provided screenshot.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep '^K' testa testb
testa:Kkkkll
testb:KKKKK
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 11: Count K Letter

● grep -n '^' testa

The grep -n '^' command display the numbers, since ^ matches the start of every line.

```
prabin-pdhn@pp:~/W8/8cat-grep$ grep -n '^' testa
1:Kkkkll
2:lllmm
3:oo-oo
4:mmmdd
5:dddkk
prabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 12: Display Number

E) Define the lsal alias for ls -al command Show that your system stores it giving the alias command (without arguments). Use it in your home directory. Show that your system does not store it.

The alias lsal = 'ls -al' command is used to assigned 'ls -al' for temporary command.

```
prabin-pdhn@pp:~/W8/8cat-grep$ cd
prabin-pdhn@pp:~$ alias lsal = 'ls-al'
alias lsal='ls -al'
bash: alias: =: not found
bash: alias: ls-al: not found
prabin-pdhn@pp:~$ alias
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo te
 error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[;&|]
')"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
alias lsal='ls -al'
alias lsl='ls -l'
alias noAD='find . -type d | wc -l'
alias noAG='ls -a | wc -l'
alias noAgts='find ~ -type f \( -name "g*" -o -name "t*" -o -name
l'
prabin-pdhn@pp:~$
```

Figure 13: Alias lsal Command

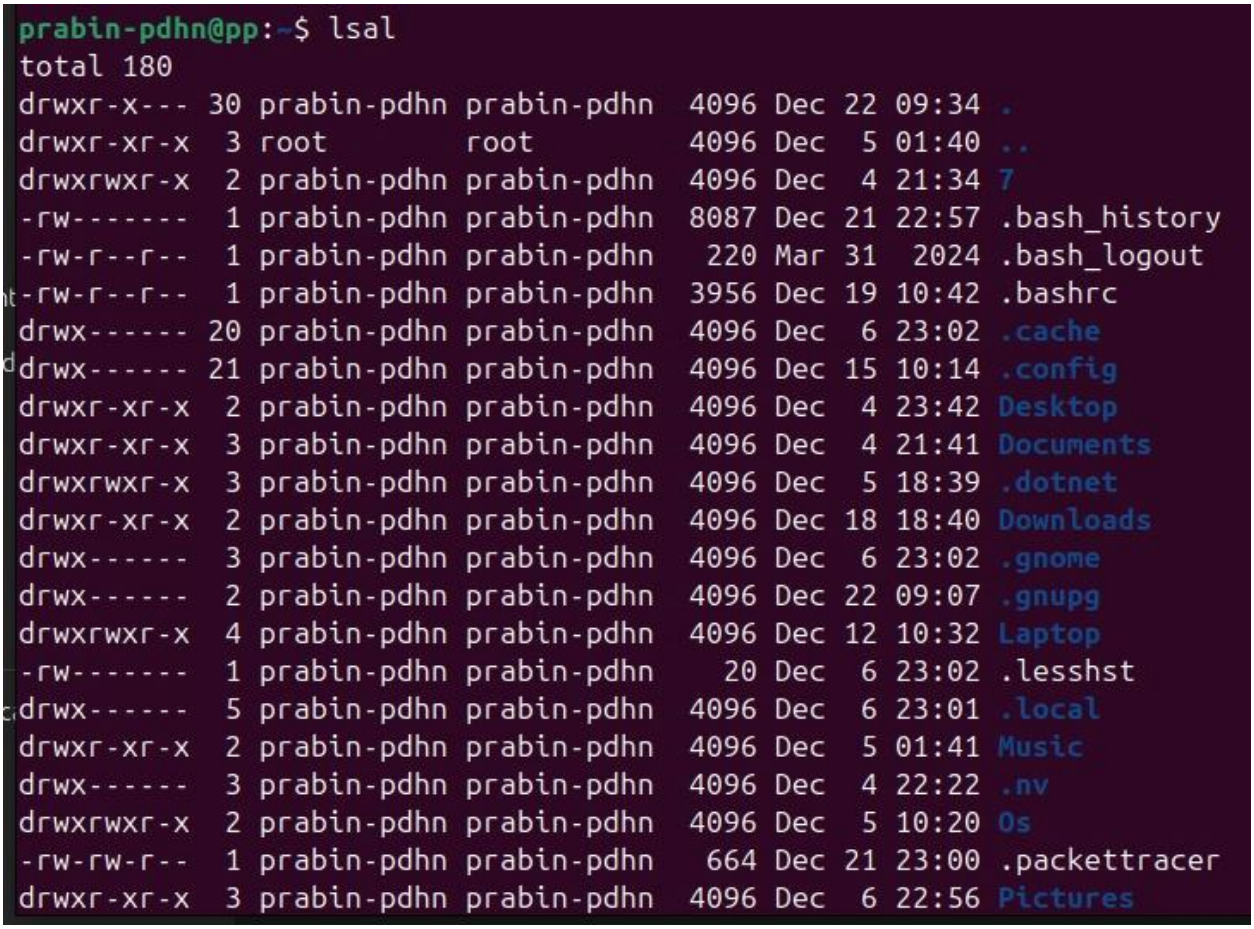

Figure 14: Assigned temporary

F) Remove the alias.

Figure 15: Removing lsal

G) Define this alias again preserving it for the next session Show that the system still keeps this your alias.

Adding alias lsal = “ls-al” in the nano bashrc and saved of our assigned alias in the system.Alias command can run after closing the terminal.

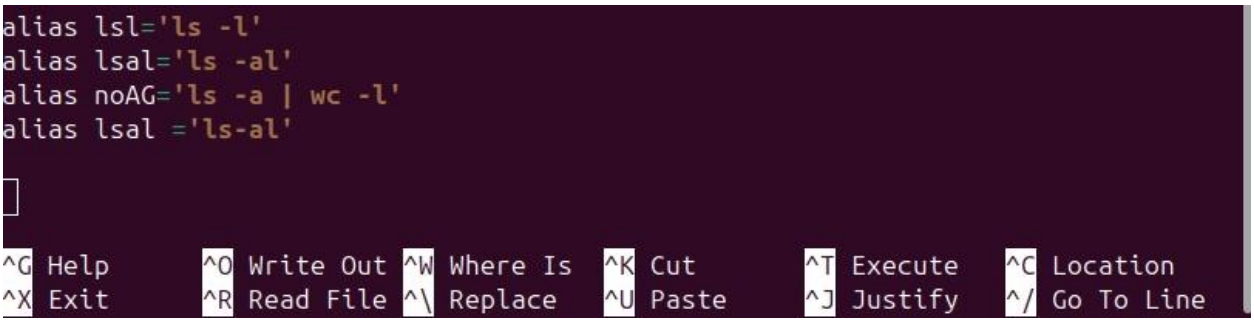

Figure 16: Nano bashrc

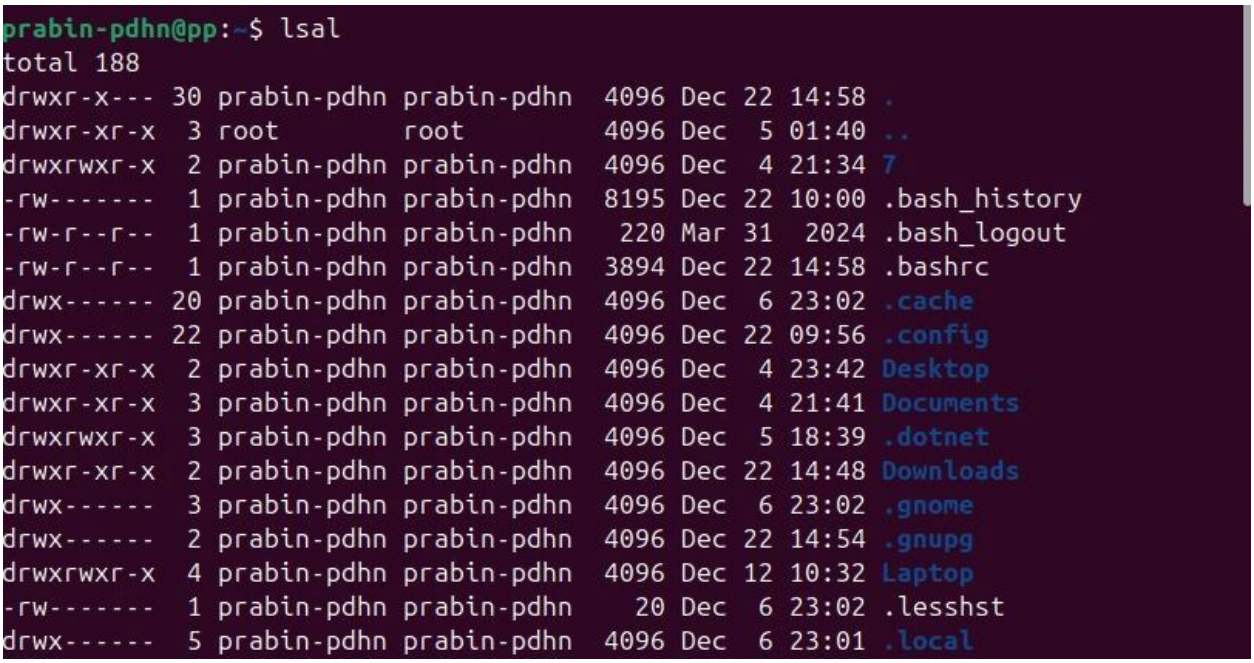

Figure 17: lsal Command

H) Define the nwho alias for the number of system file at UNIX computers.

alias nwho=’getent passwd|wc -l’.

This nwho command shows number of system file at UNIX computer. As you can see in the Screenshot

```
prabin-pdhn@pp:~$ alias nwho='getent passwd | wc -l'
prabin-pdhn@pp:~$ nwho
50
prabin-pdhn@pp:~$
```

Figure 18: System Files

I) Give the command nwho. Compare the figure displayed with ones got by your UNIX-mates.

```
prabin-pdhn@pp:~$ alias nwho='getent passwd | wc -l'
prabin-pdhn@pp:~$ nwho
50
prabin-pdhn@pp:~$
```

Figure 19: nwho Command

J) List your last commands executed giving the history command.

```
 496  cat workshop9
 497  alias nwho='getent passwd | wc -l'
 498  nwho
 499  history
 500  cd W8
 501  cd 8cat-grep
 502  history
rabin-pdhn@pp:~/W8/8cat-grep$
```

Figure 20: History of Commands

12) Re-execute the last but one command using the redo (r) command and the number of the event.

fc -r

```
  GNU nano 7.2                  /tmp/bash-fc.7QXXx3
history
```

Figure 21: Used of r Command

K) Re-execute the command given three commands ago using the negative integer.

!-3

```
prabin-pdhn@pp:~$ !-3
alias nwho='getent passwd | wc -l'
prabin-pdhn@pp:~$
```

Figure 22: Last Three Commands

L) Re-execute the last command which name begins with ‘l’.

fc -e- l

```
prabin-pdhn@pp:~$ fc -e- l
lsal
total 188
drwxr-x--- 30 prabin-pdhn prabin-pdhn  4096 Dec 22 14:58 .
drwxr-xr-x  3 root        root         4096 Dec  5 01:40 ..
drwxrwxr-x  2 prabin-pdhn prabin-pdhn  4096 Dec  4 21:34 7
-rw-------  1 prabin-pdhn prabin-pdhn  8195 Dec 22 10:00 .bash_history
-rw-r--r--  1 prabin-pdhn prabin-pdhn   220 Mar 31  2024 .bash_logout
-rw-r--r--  1 prabin-pdhn prabin-pdhn  3894 Dec 22 14:58 .bashrc
drwx------ 20 prabin-pdhn prabin-pdhn  4096 Dec  6 23:02 .cache
drwx------ 22 prabin-pdhn prabin-pdhn  4096 Dec 22 09:56 .config
drwxr-xr-x  2 prabin-pdhn prabin-pdhn  4096 Dec  4 23:42 Desktop
drwxr-xr-x  3 prabin-pdhn prabin-pdhn  4096 Dec  4 21:41 Documents
drwxrwxr-x  3 prabin-pdhn prabin-pdhn  4096 Dec  5 18:39 .dotnet
drwxr-xr-x  2 prabin-pdhn prabin-pdhn  4096 Dec 22 14:59 Downloads
drwx------  3 prabin-pdhn prabin-pdhn  4096 Dec  6 23:02 .gnome
drwx------  2 prabin-pdhn prabin-pdhn  4096 Dec 22 14:54 .gnupg
```

Figure 23L Command Executing with 'l'

3. Conclusion:

This workshop focuses on through organized, practical exercises, this workshop improved practical skills in using UNIX command-line tools. Users were able to better comprehend the structure of the file system by creating files and directories. Text searching and pattern matching skills, which are critical for log analysis and data filtering, were enhanced by the use of grep. While command history features demonstrated efficient ways to reuse past commands, alias creation showed how command efficiency can be increased. All things considered, the workshop increased self-assurance in handling and navigating UNIX systems and offered a strong basis for more complex shell scripting and system administration tasks.

References:

The Linux Documentation Project, *Bash Beginner's Guide – Section 3.5: Aliases*, available at: https://tldp.org/LDP/Bash-Beginners-Guide/html/sect_03_05.html (Accessed: 22 December 2025).

GeeksforGeeks, *grep Command in Unix/Linux*, available at: https://www.geeksforgeeks.org/linux-unix/grep-command-in-unixlinux/ (Accessed: 22 December 2025).