

Department of Cybersecurity

Linux Programming

ASSIGNMENT 6

Mohd Sahil Ansari

USN:ENG24CY0134

Class: 3-A

Roll no: 22

1. Which command is used to list the contents of a directory? Justify with proper example. (CO1)

`ls`

It lists files and directories in the current directory.

Example: `ls /home/user/Documents`

2. Write the command to create a new directory named 123test_dir. (CO1)

`mkdir 123test_dir`

3. What is the purpose of the sed command? Justify with proper example. (CO1)

The `sed` command (Stream Editor) is used to **find and replace text** or **edit text streams** in files.

`sed 's/linux/unix/g' file.txt`

This replaces all occurrences of "linux" with "unix" in file.txt.

4. Which distinct command is used to display one-line descriptions of any commands? (CO1)

whatis

5. Write the command to create an empty file named "notes.txt". (CO1)

touch notes.txt

6. Differentiate between grep and awk commands with an example. (CO2)

Feature	grep	awk
Purpose	Searches for text patterns	Processes and formats text data
Works on	Matching lines	Fields/columns within lines
Example	grep "error" log.txt → shows lines containing "error"	awk '{print \$1, \$3}' data.txt → prints 1st and 3rd columns

7. Write the command to give read, write, and execute permission to the owner of a file script.sh. (CO1)

chmod u+rwx script.sh

8. How is chown different from chgrp? Give one example for each. (CO1)

- **chown** changes the **owner** of a file.
 - Example: chown user1 file.txt
- **chgrp** changes the **group** ownership of a file.
 - Example: chgrp staff file.txt

9. A user complains that they cannot execute a file even though it exists in their directory. How would you troubleshoot this using ls -l, chmod, and whoami? (CO3)

1. Check file permissions:

ls -l filename

2. Identify current user:

whoami

3. If execute permission is missing, grant it:

chmod +x filename

10. Design a command pipeline to: find all .log files modified in the last 2 days in /var/log, display them on

screen, and save the results into a file recent_logs.txt using tee command. (CO4)

```
find /var/log -name "*.log" -mtime -2 | tee recent_logs.txt
```