Linux Programming: Assignment-6

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

Ans: Command: ls ls command stand for list It displays all the files and sub directories It provides detailed information making it very versatile for inspecting files in linux

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

Command: mkdir We can create the 123test_dir by command mkdir 123test_dir It stands for make directory Creates a folder with specified name

3. What is the purpose of the sed command? Justify with a proper example.

Ans: The **s**ed command is used for stream editing where we can find,replace,insert,or delete text in files Purpose of sed command
- Text substitution/replacement
- Deleting or inserting lines
- Performing batch edits on files
- Filtering and transforming text in pipelines Example: Hello World Hello Linux command :sed 's/Hello/Hi/' file.txt output : Hi World Hi Linux Instead of manually editing we can used sed command to transform a complex editing in one single command

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

Ans: Command: what is It provides a small detailed description of the specified command it is ideal for quick reference

5. Write the command to create an empty file named “notes.txt”.

Ans: Command: touch notes.txt This command creates empty files, if the file does not exist it will be created as an empty files

6. Differentiate between grep and awk commands with an example.

Ans: grep command is used to search a specific pattern in files or input it filters lines containing the pattern Awk command is a text processing tool used to search,extract,manipulate and format data form text files
Example for grep command apple 10 banana 20 cherry 15 command : grep "banana" file.txt

Output: banana 20 command: awk '$2 > 12 {print $2}' file.txt Output: 20 15

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

Ans: Command: chmod u+rwx script.sh Example: chmod u+rwx script.sh ls -l script.sh Output: -rwxr--r-- 1 user user 1024 Oct 11 22:00 script.sh

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

Ans: Chown command: This command changes the owner of a file or directory Example: chown note file.txt check:ls -l file.txt Output:-rw-r--r-- 1 alice users 1024 Oct 11 22:00 file.txt chgrp command: This command changes the group ownership of a file or directory Example: chgrp notes file.txt check:ls -l file.txt output:-rw-r--r-- 1 alice developers 1024 Oct 11 22:00 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?

Ans: 1.Check the file permission by the ls -l command ls -l filename 2.check the current user,use the whoami command Whoami 3. Add execute permission if needed by using the chmod command to give execute permission 4.verify it again by the ls -l command after adding the execute

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.

Ans: Command: find /var/log -name "*.log" -mtime -2 | tee recent_logs.txt