Operating System

(4ITRC2)

IT IV Semester

Submitted by

SOMY GARG

23I4070

Information Technology -A

Submitted to

Jasneet kaur

Department of Information Technology

Institute of Engineering and
Technology

Devi Ahilya Vishwavidhyalaya, Indore (M.P.) India

(www.iet.dauniv.ac.in**)**

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Lab Assignment 2

Part 1: Execution of Commands

1. pwd Command---- checks his current directory:

pwd -> Output: /home/somy/documents

2. **ls Command** – Lists files and directories in the current directory:

Output: file1.txt file2.txt folder1 folder2

3. **cd Command** – Changes to another directory:

cd /home/somy/projects -> No output.

4. **mkdir Command** – Creates a new directory:

mkdir new_folder

Output: (No output, but new_folder is created in /home/somy/documents)

5. **touch Command** – Creates an empty file:

touch newfile.txt

Output: (No output, but newfile.txt is created in /home/somy/documents)

6. **rm Command** – Deletes a file:

rm newfile.txt

Output: (No output, but newfile.txt is deleted)

7. **hostname Command –** Displays the system's hostname**:**

hostname

Output: somy-PC

8. **mv Command** – Renames or moves a file:

mv backup.txt folder1/backup.txt

Output: (No output, but backup.txt is moved to /home/somy/documents/folder1/)

9. **cat Command** – Displays file content:

cat file1.txt

Output: (Displays contents of file1.txt)

10. echo Command – Prints a message or writes to a file:

echo "Hello, Somy!"

Output: Hello, Somy!

11.fgrep Command – Searches for an exact word or phrase in a file:

fgrep "test" file1.txt

Output: (Displays lines in file1.txt containing the exact word "test")

12. chmod Command – Changes file permissions:

chmod 755 file1.txt

Output: (No output, but file1.txt now has new permissions)

13. cp Command – Copies a file or directory**:**

cp file1.txt backup.txt

Output: (No output, but file1.txt is copied as backup.txt)

14.more Command – Displays file content page by page**:**

more file1.txt

Output: (Displays file1.txt one screen at a time; press Space to scroll)

15. grep Command – Searches inside files for text:

grep "keyword" file1.txt

Output: (Displays lines in file1.txt containing "keyword")

16. less Command – Similar to more, but allows backward navigation:

less file1.txt

Output: (Displays file1.txt with the ability to scroll up and down using arrow keys)

17. tail Command – Displays the last 10 lines of a file:

tail file1.txt

Output: (Displays the last 10 lines of file1.txt)

18.wc Command – Counts words, lines, and characters in a file:

wc file1.txt

Output: 10 50 200 file1.txt (Shows lines, words, and characters in file1.txt)

19. awk Command – Extracts and manipulates text in a file:

awk '{print $1}' file1.txt

Output: (Displays the first word from each line of file1.txt)

20. sed Command – Edits text in a file**:**

sed 's/test/example/' file1.txt

Output: (Replaces the first occurrence of "test" with "example" in each line of file1.txt)

Part 2:

1. How to navigate to a Specific Directory?

- Use the cd command followed by the directory path:

cd /path/to/directory

- To go back one level, use:

cd ..

- To return to your home directory:

cd ~

- To navigate to the previous directory:

cd –

2. How to see detailed information about files and directories using ls?

- Use the -l option to list files with details:

ls -l

- Use the -a option to show hidden files:

ls -a

- Combine both options for a detailed view including hidden files:

ls -la

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3. How to create multiple directories in Linux using mkdir?

- To create multiple directories at once:

mkdir dir1 dir2 dir3

- To create nested directories:

mkdir -p parent/child/grandchild

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4. How to remove multiple files at once with rm?

- To delete multiple files:

rm file1.txt file2.txt file3.txt

- To delete all .txt files in a directory:

rm *.txt

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5. Can rm be used to delete directories?

- Yes, use rm -r to delete directories and their contents:

rm -r directory_name

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6. How do you copy files and directories in Linux?

- To copy a file:

cp source.txt destination.txt

- To copy a directory:

cp -r source_directory/ destination_directory/

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7. How to rename a file in Linux using mv?

- Use the mv command:

mv oldname.txt newname.txt

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8. How to move multiple files in Linux using mv?

- Move multiple files to a directory:

mv file1.txt file2.txt /destination/

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9. How to create multiple empty files using touch?

- To create multiple files at once:

touch file1.txt file2.txt file3.txt

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10. How to view the content of multiple files in Linux?

- Use cat to display multiple files:

cat file1.txt file2.txt

- Use more to read large files one page at a time:

more file1.txt

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11. How to create a file and add content using cat?

- Create a file and enter text:

cat > myfile.txt

- Press **Ctrl + D** to save and exit.

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12. How to append the contents of one file to another using cat?

- Append content of file1.txt to file2.txt:

cat file1.txt >> file2.txt

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13. How to use cat if the file has too much content?

- Use less to navigate through large files:

cat file.txt | less

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14. How to merge contents of multiple files using cat?

- Merge file1.txt and file2.txt into merged.txt:

cat file1.txt file2.txt > merged.txt

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15. How to append to an existing file using cat?

- Append text to an existing file:

cat >> myfile.txt

- Press **Ctrl + D** to save and exit.

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16. What is chmod 777, chmod 755, and chmod +x?

- chmod 777 file.txt → Full permissions (read, write, execute) for all users.

chmod 777 file.txt

- chmod 755 file.txt → Owner has full permissions; others can only read and execute.

chmod 755 file.txt

- chmod +x file.txt → Makes the file executable.

chmod +x file.txt

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17. How to find the number of lines that match a string?

- Use grep -c to count occurrences:

grep -c "pattern" file.txt

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18. How to display files that contain a specific string?

- Use grep -l to list matching files:

grep -l "pattern" *.txt

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19. How to show line numbers of matches?

- Use grep -n to show matching lines with numbers:

grep -n "pattern" file.txt

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20. How to match lines that start with a string using grep?

- Use ^ to match the beginning of lines:

grep "^string" file.txt

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21. Can the sort command be used to sort files in descending order by default?

- No, but you can sort in descending order using -r:

sort -r file.txt

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22. How can I sort a file based on a specific column using the sort command?

- Sort a file based on the second column:

sort -k2 file.txt