4ITRC2

Operating System Lab

Lab Assignment 2

SUBMITTED TO: SUBMITTED BY:

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Part I:

**1.pwd (Print Working Directory)**

* **Output:** Prints the current working directory.
* Example: /home/user/documents

**2.cd (Change Directory)**

* + **Output:** No output if successful; error message if the directory doesn't exist.
  + Example:: cd: nonexistent\_directory: No such file or directory

**3.ls (List Files and Directories)**

* + **Output:** Lists files and directories in the current directory.
  + Example: file1.txt file2.txt directory1 script.sh

**4.mkdir (Make Directory)**

* + **Output:** No output if successful; error if the directory exists.
  + Example: mkdir: cannot create directory 'test': File exists

**5.rm (Remove Files or Directories)**

* + **Output:** No output if successful; error if the file does not exist.
  + Example:rm: cannot remove 'file.txt': No such file or directory

**6.touch (Create an Empty File or Update Timestamp)**

* + **Output:** No output if successful.

**7.hostname (Displays the System’s Hostname)**

* + **Output:** Prints the system's hostname.
  + Example:my-computer

**8.cat (Concatenate and Display File Contents)**

* + **Output:** Displays the contents of a file.
  + Example:Hello, this is a test file.

**9.chmod (Change File Permissions)**

* + **Output:** No output if successful.

**10.echo (Print Text to Standard Output)**

* **Output:** Prints the provided text.
* Example:Hello, world!

**11.grep (Search for Patterns in a File)**

* **Output:** Displays lines containing the pattern.
* Example:This is a sample line containing the keyword.

**12.fgrep (Fixed-String Search, Deprecated in Favor of grep -F)**

* **Output:** Same as grep -F, searching for a fixed string.

**13.mv (Move or Rename Files)**

* **Output:** No output if successful.

**14.cp ( Files or Directories)**

* **Output:** No output if successful.

**15.more (View File Contents One Page at a Time)**

* **Output:** Displays file content one page at a time, allowing scrolling.

**16.less (View File Contents with More Features Than more)**

* **Output:** Displays file content with navigation options.

**17.wc (Word Count - Count Lines, Words, Characters in a File)**

* **Output:** Prints line, word, and character count.
* Example:10 50 300 file.txt

**18.awk (Pattern Scanning and Processing Language)**

* **Output:** Processes and prints text based on given patterns.
* Example:John 50000

**19.sed (Stream or for Filtering and Transforming Text)**

* **Output:** Modifies text as per given commands.
* Example:This is a modified line.

**20.tail (Displays Last Few Lines of a File)**

* **Output:** Prints the last 10 lines of a file by default.This is the last line of the file.

Part II

1.**How to navigate to a specific directory?**

cd /path/to/directory

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

ls -l

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

mkdir dir1 dir2 dir3

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

rm file1 file2 file3

5. **Can rm be used to delete directories?**

Yes, use:rm -r directory\_name

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

* a file:cp file1.txt /destination/path/
* a directory recursively:cp -r dir1 /destination/path/

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

mv old\_filename.txt new\_filename.txt

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

mv file1 file2 file3 /destination/path/

9. **How to create multiple empty files by using touch command in Linux?**

touch file1.txt file2.txt file3.txt

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

cat file1.txt file2.txt

11. **How to create a file and add content in Linux using cat command?**

cat > filename.txt

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

cat file1.txt >> file2.txt

13. **How to use cat command if the file has a lot of content and can’t fit in the terminal?**

cat filename.txt | less

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

cat file1.txt file2.txt > merged\_file.txt

15. **How to use cat command to append to an existing file?**

cat >> existing\_file.txt

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

* chmod 777 filename → Gives read, write, and execute permissions to everyone.
* chmod 755 filename → Gives full permissions to the owner and read/execute to others.
* chmod +x filename or chmod a+x filename → Makes the file executable.

17. **How to find the number of lines that match the given string/pattern?**

grep -c "pattern" filename.txt

18. **How to display the files that contain the given string/pattern?**

grep -l "pattern" \*.txt

19. **How to show the line number of a file with the line matched?**

grep -n "pattern" filename.txt

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

grep "^pattern" filename.txt

21. **Can the sort command be used to sort files in descending order by default?**  
No, but you can sort in descending order using:

sort -r filename.txt

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

sort -k2 filename.txt