

DEPARTMENT OF INFORMATION TECHNOLOGY

INSTITUTE OF ENGINEERING AND TECHNOLOGY , INDORE



LAB ASSIGNMENT OF OPERATING SYSTEM

SUBJECT CODE: 4ITRC2

LAB ASSIGNMENT - 02

NAME : Ghanshyam Batane

ROLLNO : 23I4131

CLASS : BE 2ND YEAR IT-B

Part1 : Outputs of the following commands

1.pwd

```
user@ubuntu:~$ pwd
/home/user
```

2. cd

```
user@ubuntu:~$ cd /home/user/Documents
user@ubuntu:~/Documents$
```

3. ls

```
user@ubuntu:~/Documents$ ls
file1.txt file2.txt projects report.pdf
```

4. mkdir

```
user@ubuntu:~/Documents$ mkdir NewFolder
user@ubuntu:~/Documents$ ls
NewFolder file1.txt file2.txt projects report.pdf
```

5. rm

```
user@ubuntu:~/Documents$ rm file2.txt
user@ubuntu:~/Documents$ ls
NewFolder file1.txt projects report.pdf
```

6. touch

```
user@ubuntu:~/Documents$ touch newfile.txt
user@ubuntu:~/Documents$ ls
NewFolder file1.txt newfile.txt projects report.pdf
```

7. hostname

```
user@ubuntu:~/Documents$ hostname
ubuntu-pc
```

8. cat

```
user@ubuntu:~/Documents$ cat file1.txt
Hello, this is a test file.
It contains multiple lines of text.
```

9. chmod

```
user@ubuntu:~/Documents$ chmod 755 newfile.txt
```

10. echo

```
user@ubuntu:~/Documents$ echo "Welcome to Linux!"
Welcome to Linux!
```

11. grep

```
user@ubuntu:~/Documents$ grep "test" file1.txt
Hello, this is a test file.
```

12. fgrep

```
user@ubuntu:~/Documents$ fgrep "test" file1.txt
Hello, this is a test file.
```

13. mv

```
user@ubuntu:~/Documents$ mv file1.txt renamed_file.txt
user@ubuntu:~/Documents$ ls
NewFolder  newfile.txt  projects  renamed_file.txt  report.pdf
```

14. cp

```
user@ubuntu:~/Documents$ cp renamed_file.txt backup/
```

15. more

```
user@ubuntu:~/Documents$ more renamed_file.txt
Hello, this is a test file.
It contains multiple lines of text.
```

16. less

```
user@ubuntu:~/Documents$ less renamed_file.txt
Hello, this is a test file.
It contains multiple lines of text.
```

17. wc

```
user@ubuntu:~/Documents$ wc renamed_file.txt
 2  10  58 renamed_file.txt
```

18. awk

```
user@ubuntu:~/Documents$ awk '{print $1}' renamed_file.txt
Hello,
It
```

19. sed

```
user@ubuntu:~/Documents$ sed 's/test/sample/' renamed_file.txt
Hello, this is a sample file.
It contains multiple lines of text.
```

20. tail

```
user@ubuntu:~/Documents$ tail renamed_file.txt
It contains multiple lines of text.
```

Part 2 : Answers to the following Questions:

1) How to navigate to a Specific Directory?

- To navigate to a specific directory, use the ``cd`` (Change Directory) command followed by the directory path.
- Command:
 - `cd /path/to/directory`

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

- The ``ls`` command lists files in a directory. Using ``-l`` provides detailed information, and ``-la`` includes hidden files.
- Command: `ls -l ,ls -la`

3) How to create multiple directories in Linux using ``mkdir`` command?

- The ``mkdir`` command is used to create directories. To create multiple directories, list their names separated by spaces. To create nested directories, use ``-p``.
- Command:
 - `mkdir dir1 dir2 dir3`
 - `mkdir -p parent/child/grandchild`

4) How to remove multiple files at once with `rm`?

- The ``rm`` command is used to remove files. You can delete multiple files by listing them or using wildcards (*).
- Command:
 - `rm file1 file2 file3`
 - `rm *.txt`

5) Can `rm` be used to delete directories?

- Use ``rm -r`` to remove a directory and its contents. Use ``-rf`` to force deletion without confirmation.
- Command:
 - `rm -r directory_name`
 - `rm -rf directory_name`

6) How Do You Copy Files and Directories in Linux?

- The `cp` command copies files. To copy directories, use `-r` for recursive copying.
- Command:
 - `cp file1 destination/`
 - `cp -r dir1 destination/`

7) How to Rename a file in Linux Using mv Command

- The `mv` command is used to rename files by specifying the old and new names.
- Command:
 - `mv old_filename new_filename`

8) How to Move Multiple files in Linux Using mv Command

- The `mv` command can also move multiple files at once by specifying the files and the destination directory.
- Command:
 - `mv file1 file2 file3 destination/`

9) How to Create Multiple Empty Files by Using Touch Command in Linux

- The `touch` command is used to create new empty files.
- Command:
 - `touch file1 file2 file3`

10) How to View the Content of Multiple Files in Linux

- To view the contents of multiple files, use the `cat` command followed by the file names.
- Command:
 - `cat file1 file2`

11)How to Create a file and add content in Linux Using `cat`

Command

- The `cat` command can be used to create a new file and add content. Type content and press `Ctrl + D` to save.
- Command:
 - `cat > filename`

12)How to Append the Contents of One File to the End of Another File using cat command

- To append the contents of one file to another, use `>>` with the `cat` command.
- Command:
 - `cat file1 >> file2`

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

- If a file is too large to fit in the terminal, use `less` to view it page by page.
- Command:
 - `cat filename | less`
 - `less filename`

14)How to Merge Contents of Multiple Files Using `cat` Command

- To merge multiple files into one, use the `cat` command followed by `>`.
- Command:
 - `cat file1 file2 > merged_file`

15)How to use cat Command to Append to an Existing File

- To append text to an existing file, use `>>` with `cat`.
- Command:
 - `cat file1 >> existing_file`

16)What is “chmod 777 “, “chmod 755” and “chmod +x “or “chmod a+x”?

- `chmod` is used to change file permissions.
- `chmod 777`: Grants full read, write, and execute permissions to everyone.
- `chmod 755`: Grants read & execute permissions to others but full access to the owner.
- `chmod +x`: Makes a file executable.

17)How to find the number of lines that matches the given string/pattern

- To count the number of lines that match a given pattern in a file, use `grep -c`.
- Command:
 - `grep -c 'pattern' filename`

18)How to display the files that contains the given string/pattern.

- To find which files contain a specific pattern, use `grep -l`.
- Command:
 - `grep -l 'pattern' *`

19)How to show the line number of file with the line matched.

- To display the line number of a matched pattern in a file, use `grep -n`.
- Command:
 - `grep -n 'pattern' filename`

20)How to match the lines that start with a string using grep

- To find lines that start with a specific string, use `^` with `grep`.
- Command:
 - `grep '^string' filename`

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

- By default, 'sort' sorts in ascending order. Use '-r' to sort in descending order.
- Command:
 - `sort -r filename`

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

- To sort a file based on a specific column, use '-k' followed by the column number.
- Command:
 - `sort -k column_number filename`
 - Example: `sort -k2 filename`