INSTITUTE OF ENGINEERING AND TECHNOLOGY , DAVV INDORE

DEPARTMENT OF INFORMATION TECHNOLOGY

LAB ASSIGNMENT OF OPERATING SYSTEM

SUBJECT CODE: 4ITRC2

LAB ASSIGNMENT - 02

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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