

1. Write a shell script which will execute following set of tasks:

- a. Create a folder named 'sample' in your 'home' directory
mkdir ~/sample
- b. Inside 'sample' folder, create a file called 'sample.txt'
touch ~/sample/sample.txt
- c. Add the following content to the file:
Hi! This is just a sample text file created using shell script.
echo "Hi! This is just a sample text file created using shell script." > ~/sample/sample.txt
- d. Print the contents of the file.
cat sample/sample.txt
- e. Print the number of occurrences of letter 't' in 'sample.txt'
grep -oi 't' ~/sample/sample.txt | wc -l
- f. Change the owner permissions to allow all the operations on the file. (Read, Write, Execute)
chmod u+rwX ~/sample/sample.txt
- g. Write command to append following content in sample.txt file:
Hi! This is just another sample text added to the file
echo "Hi! This is just another sample text added to file." >> ~/sample/sample.txt
- h. Change the group permissions to allow only read operation.
chmod g+r ~/sample/sample.txt
- i. Change the all users permission to deny any sort of access to 'sample.txt'
chmod 000 ~/sample/sample.txt
- j. Write command to create file named sample2.txt with content similar to that of sample.txt
cp ~/sample/sample.txt ~/sample/sample2.txt

chmod 755 ~/sample/sample.txt
(This sets the owner to have read, write, and execute permissions (7), and group and other users to have read and execute permissions (5))

k. Add some random 1000 lines in the sample.txt file.

for i in {1..1000}; do echo \$RANDOM >> ~/sample/sample.txt; done

l. Write command to print top 50 lines of file

head -n 50 sample/sample.txt

m. Write command to print bottom 50 lines of the file

tail -n 50 sample/sample.txt

n. Add 5 files in the same folder named: prog1.txt, prog2.txt, program.txt, code.txt, info.txt

**touch sample/prog1.txt sample/prog2.txt sample/program.txt sample/code.txt
sample/info.txt**

o. Write the command to list files which have "prog" in its name.

ls ~/sample/*prog*

P. Create an alias of the command used at step o. Such that following command:

list prog

Should have the same output as of command at step o.

alias list='ls ~/sample/*prog*'

2. What is the difference between source and sh commands?

These commands are used to run the shell scripts. Source command runs in the current shell environment and sh command runs in a new shell environment.

3. Create two files "a.txt" and "b.txt". Write a command to get the difference between the contents in two files.

echo "This is file a" > a.txt

echo "This is file b" > b.txt

diff a.txt b.txt

4.What is the difference between ls and lsof?

ls is used to list all the files and directories, size, last modifications and lsof is used to list all the open directories or working directories and processes on them.

5.Create directories ./hello/world (World dir is inside hello dir) using mkdir command where neither hello or world exists. It should be a single command without the use of &&.

```
mkdir -p ./hello/world
```

6.How can you permanently set an environment variable using a bash terminal?

```
nano ~/.bashrc
```

```
export VARIABLE_NAME=value
```

7.You have some process running on a port in your system. How can you view and then kill the process from the terminal?

```
kill port_number
```

