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Student Name: Niwahang Angbuhang

London Met ID: 20048942

College ID: np01cp4s210237

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Title (Where Required): Linux Commands

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

Table of Contents

INTRODUCTION

An operating system is the software of the system which handles the computer hardware, software, and resources. It also gives services for computer programs. Some examples of the operating system include Windows, Linux, Android, etc. In our coursework, we will be using Ubuntu which is built on the Linux kernel to understand some of its commands. Linux is an open-source community-developed operating system that can be used for servers, computers, mobile devices, and embedded devices. Linux is supported on every major platform like x86, ARM, and SPARC. It is one of the most supported operating systems worldwide. There are different versions of Linux and every version of Linux manages resources, handles applications, and gives some sort of user interface.

Transcript

```
Script started on 2022-03-26 20:39:48-07:00 [TERM="xterm-256color" TTY="/dev/pts/0" COLUMNS="80" LINES="24"]
```

1. Creating a new directory

Task 1

Command :

```
/home/niwahang>mkdir -p IPL/{"Mumbai Indians",KKR,Punjab,"Rajisthan Royals",RCB}
```

Response:

Description:

After the script is started, the first command used is mkdir. It is used to create a directory. -p in the above code is used so that the subdirectory can be created even though the parent directory is already created.

Command:

```
/home/niwahang>tree IPL
```

Response:

```
IPL
├── KKR
├── Mumbai Indians
├── Punjab
├── Rajisthan Royals
└── RCB

5 directories, 0 files
```

Description:

The tree command is used to show all the files and directories present in the IPL directory in a tree form.

2. Removing Existing Files and Directories

Task 2

Command :

```
/home/niwahang>cd IPL/KKR
/home/niwahang/IPL/KKR>pwd
```

Response:

```
/home/niwahang/IPL/KKR
```

Description:

the cd command is used to change the directory to the KKR directory and the pwd command is used to show the current working directory.

Command:

```
/home/niwahang/IPL/KKR>touch Niwa Angbu
/home/niwahang/IPL/KKR>cd ..
/home/niwahang/IPL>tree
```

Response:

```
.
├── KKR
│   ├── Angbu
│   └── Niwa
├── Mumbai Indians
├── Punjab
├── Rajisthan Royals
└── RCB

5 directories, 2 files
```

Description:

Touch is used to create two files Niwa and Angbu. Cd .. is used to go back to the previous directory and tree is used to show the created files.

Task 3

Command :

```
/home/niwahang/IPL>rm -i KKR/{Niwa,Angbu}
```

Response:

```
rm: remove regular empty file 'KKR/Niwa'? Y
rm: remove regular empty file 'KKR/Angbu'? Y
```

Description:

rm is used to remove the files Niwa and Angbu. -i is used for user input. The user needs to confirm whether to delete the files or not.

Command :

```
/home/niwahang/IPL>tree
```

Response:

```
.
├── KKR
├── Mumbai Indians
├── Punjab
├── Rajisthan Royals
└── RCB

5 directories, 0 files
```

Description:

The tree is used to confirm if the files were deleted.

3. Usage of the echo command

Task 4

Command :

```
/home/niwahang/IPL>echo "Hello! I am big fan of IPL."
```

Response:

```
Hello! I am big fan of IPL.
```

Description:

The echo is used to print the text written in the terminal.

Command:

```
/home/niwahang/IPL>echo "14<(2+2)"
```

Response:

```
14<(2+2)
```

Description:

The echo is used again to print the text written in the terminal.

Task 5

Command :

```
/home/niwahang/IPL>pwd
```

Response:

```
/home/niwahang/IPL
```

Description:

Pwd is used to show the current working directory.

Command:

```
/home/niwahang/IPL>cd KKR
/home/niwahang/IPL/KKR>pwd;cd;pwd
```

Response:

```
/home/niwahang/IPL/KKR
/home/niwahang
```

Description:

Cd is used to change the directory to KKR and pwd;cd;pwd is used to show the current working directory, go to the home directory, and show the current directory again.

Task 6

Command :

```
/home/niwahang>cd IPL/KKR
/home/niwahang/IPL/KKR>pwd; cd ..; pwd; cd ..; pwd
```

Response:

```
/home/niwahang/IPL/KKR
/home/niwahang/IPL
/home/niwahang
```

Description:

Cd is used to change the directory to KKR. Pwd; cd ..; pwd; cd ..; pwd is used to show the current directory, go to the previous directory, and show the current directory again. This step is continued one more time.

4. Usage of ls command

Task 7

Command :

```
/home/niwahang>cd IPL
/home/niwahang/IPL>cd; pwd
```

Response:

```
/home/niwahang
```

Description:

cd is used to change the directory to IPL. Cd; pwd is used to go to the home directory and show the current working directory.

Command:

```
/home/niwahang>ls
```

Response:

```
20048942CW1P1  Documents  IPL    Pictures  Templates
Desktop        Downloads  Music  Public    Videos
```

Description:

Ls is used to list all the files and directories in the current directory.

Command :

```
/home/niwahang>ls -a
```

Response:

```
.              .bashrc       Documents  Music                Templates
..             .bashrc.save  Downloads  Pictures             Videos
20048942CW1P1  .cache        .gnupg     .profile
.bash_history  .config       IPL        Public
.bash_logout   Desktop       .local     .sudo_as_admin_successful
```

Description:

-a is used to list all files, directories, and hidden files.

Command :

```
/home/niwahang>ls -al
```

Response:

```
total 84
drwxr-xr-x 15 niwahang niwahang 4096 Mar 26 20:40 .
drwxr-xr-x  3 root     root     4096 Mar 19 00:22 ..
-rw-rw-r--  1 niwahang niwahang    0 Mar 26 20:39 20048942CW1P1
-rw-------  1 niwahang niwahang 4471 Mar 26 20:39 .bash_history
-rw-r--r--  1 niwahang niwahang  220 Mar 19 00:22 .bash_logout
-rw-r--r--  1 niwahang niwahang 3771 Mar 26 20:13 .bashrc
-rw-r--r--  1 niwahang niwahang 3772 Mar 26 20:31 .bashrc.save
drwx------ 12 niwahang niwahang 4096 Mar 19 03:53 .cache
drwx------ 14 niwahang niwahang 4096 Mar 22 06:23 .config
drwxr-xr-x  2 niwahang niwahang 4096 Mar 26 20:13 Desktop
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Documents
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Downloads
drwx------  3 niwahang niwahang 4096 Mar 19 00:43 .gnupg
drwxrwxr-x  7 niwahang niwahang 4096 Mar 26 20:40 IPL
drwxr-xr-x  3 niwahang niwahang 4096 Mar 19 00:43 .local
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Music
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Pictures
-rw-r--r--  1 niwahang niwahang  807 Mar 19 00:22 .profile
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Public
-rw-r--r--  1 niwahang niwahang    0 Mar 22 04:52 .sudo_as_admin_successful
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Templates
drwxr-xr-x  2 niwahang niwahang 4096 Mar 19 00:43 Videos
```

Description:

ls -al is used to list all files, directories, and hidden files in long list format.

Task 8

Command :

```
/home/niwahang>cd; pwd; cd cw2; pwd
```

Response:

```
home/niwahang
bash: cd: cw2: No such file or directory
/home/niwahang
```

Description:

cd; pwd; cd cw2; pwd is used to change the directory to home directory, then show the current working directory, then change the directory to cw2 and show the current directory. Since cw2 directory does not exist, a message is shown accordingly, and the home directory is shown in the last pwd.

Command:

```
/home/niwahang>ls -R
```

Response:

```
.:
20048942CW1P1  Documents  IPL   Pictures  Templates
Desktop        Downloads  Music  Public   Videos

./Desktop:

./Documents:

./Downloads:

./IPL:
 KKR  'Mumbai Indians'   Punjab  'Rajisthan Royals'   RCB

./IPL/KKR:

'./IPL/Mumbai Indians':

./IPL/Punjab:

'./IPL/Rajisthan Royals':

./IPL/RCB:

./Music:

./Pictures:

./Public:

./Templates:

./Videos:
```

Description:

Ls -R is used to list all files and directories recursively in the current working directory.

Task 9

Command :

```
/home/niwahang>cd IPL/RCB
/home/niwahang/IPL/RCB>cat >testX
aaabb Aaaaa AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
/home/niwahang/IPL/RCB>cat >testY
aaabb Aaaaa AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
/home/niwahang/IPL/RCB>cat >testZ
aaabb Aaaaa AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Response:

Description:

cd is used to change the directory to RCB in IPL. Cat > testX is used to create a new file named testX and the contents of the files are written. The same is done for testY and testZ.

Task 10

Command :

```
/home/niwahang/IPL/RCB>cat  testX
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Cat testX is used to read the contents of testX in the terminal.

Command :

```
/home/niwahang/IPL/RCB>cat  testY
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Cat testY is used to read the contents of testY in the terminal.

Command :

```
/home/niwahang/IPL/RCB>cat  testZ
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Cat testZ is used to read the contents of testZ in the terminal.

Task 11

Command :

```
/home/niwahang/IPL/RCB>cp {testX,testY,testZ} ../"Rajisthan Royals"
/home/niwahang/IPL/RCB>cd ..
/home/niwahang/IPL>tree
```

Response:

```
.
├── KKR
├── Mumbai Indians
├── Punjab
├── Rajisthan Royals
│   ├── testX
│   ├── testY
│   └── testZ
└── RCB
    ├── testX
    ├── testY
    └── testZ

5 directories, 6 files
```

Description:

Cp is used to copy the files testX, testY, and testZ to Rajisthan Royals directory. Cd .. is used to go to the previous directory. The tree is used to confirm if the files were copied.

Task 12

Command :

```
/home/niwahang/IPL/RCB>cat  testX testY testZ
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Cat testX testY testZ is used to show the contents of all the files specified.

Command:

```
/home/niwahang/IPL/RCB>cat  testX testY testZ>testResult
/home/niwahang/IPL/RCB>cat  testResult
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Cat testX testY testZ > testResult is used to copy the contents of testX, testY, and testZ into testResult. Cat testResult is used to show the contents of it.

Task 13

Command :

```
/home/niwahang/IPL/RCB>cat  test[XYZ]
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Cat test[XYZ] is used to show the contents of testX, testY, and testZ at the same time in order.

6. Usage of chmod command

Task 14

Command :

```
/home/niwahang/IPL/RCB>ls -l
```

Response:

```
total 16
-rw-rw-r-- 1 niwahang niwahang 234 Mar 26 20:44 testResult
-rw-rw-r-- 1 niwahang niwahang  78 Mar 26 20:43 testX
-rw-rw-r-- 1 niwahang niwahang  78 Mar 26 20:43 testY
-rw-rw-r-- 1 niwahang niwahang  78 Mar 26 20:43 testZ
```

Description:

ls -l is used to list the files in the directory in a long list format.

Command:

```
/home/niwahang/IPL/RCB>chmod 000 testX
/home/niwahang/IPL/RCB>ls -l testX
```

Response:

```
---------- 1 niwahang niwahang 78 Mar 26 20:43 testX
```

Description:

Chmod is used to change the permission of the file. 000 removes all the permission. Ls -l is used to list the file testX in a long list format where we can see the permission for the file as well.

Command :

```
/home/niwahang/IPL/RCB>cat testX
```

Response:

```
cat: testX: Permission denied
```

Description:

Cat testX is used to show the contents of the file but since we removed the permission, it cannot be opened.

Command :

```
/home/niwahang/IPL/RCB>cat  > testX
```

Response:

```
bash: testX: Permission denied
```

Description:

Since the permission is removed, we cannot write to the file using cat > testX as well.

Command :

```
/home/niwahang/IPL/RCB>chmod  600 testX
/home/niwahang/IPL/RCB>ls  -l testX
```

Response:

```
-rw------- 1 niwahang niwahang  78 Mar  26 20:43 testX
```

Description:

Read and write permission is given to the file using chmod 600 and ls -l is used to list the file in long list format to see the permission as well.

Command :

```
/home/niwahang/IPL/RCB>cat  testX
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Since read and write permission is given, now we can read the file using cat.

Command :

```
/home/niwahang/IPL/RCB>cat  > testX
```

Response:

```
aaabb  Aaaaa  AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Since read and write permission is given, now we can write to the file using cat > filename.

Task 15

Command :

```
/home/niwahang/IPL/RCB>cd ..
/home/niwahang/IPL>ls -l
```

Response:

```
total 20
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 KKR
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 'Mumbai Indians'
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 Punjab
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:44 'Rajisthan Royals'
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:44 RCB
```

Description:

Cd .. is used to go to the previous directory and ls -l is used to list the files in long list format.

Command :

```
/home/niwahang/IPL>chmod 000 RCB
/home/niwahang/IPL>ls -l
```

Response:

```
total 20
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 KKR
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 'Mumbai Indians'
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 Punjab
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:44 'Rajisthan Royals'
d--------- 2 niwahang niwahang 4096 Mar 26 20:44 RCB
```

Description:

Chmod is used to remove all permission from the RCB directory and ls -l is used to list the files in long list format to show the permissions.

Command :

```
/home/niwahang/IPL>cat RCB/testX
```

Response:

```
cat: RCB/testX: Permission denied
```

Description:

Since the permission is removed, reading the file inside the RCB directory is not possible.

Command :

```
/home/niwahang/IPL>touch RCB/Niwa
```

Response:

```
touch: cannot touch 'RCB/Niwa': Permission denied
```

Description:

Since the permission is removed, creating a file inside the RCB directory is not possible.

Command :

```
/home/niwahang/IPL>ls -l RCB
```

Response:

```
ls: cannot open directory 'RCB': Permission denied
```

Description:

Since the permission is removed, listing all files inside the RCB directory is not possible as well.

Command :

```
/home/niwahang/IPL>chmod 700 RCB
/home/niwahang/IPL>ls -l
```

Response:

```
total 20
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 KKR
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 'Mumbai Indians'
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:40 Punjab
drwxrwxr-x 2 niwahang niwahang 4096 Mar 26 20:44 'Rajisthan Royals'
drwx------ 2 niwahang niwahang 4096 Mar 26 20:44 RCB
```

Description:

Chmod 700 is used to change the permission to read, write and execute. Ls -l is used to list the files in a long list format to show the permissions.

Command :

```
/home/niwahang/IPL>cat RCB/testX
```

Response:

```
aaabb Aaaaa AAAAA
bbbcc Bbbbb BBBBB
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Since the permissions are given, reading the file in the RCB directory is possible.

Command :

```
/home/niwahang/IPL>touch RCB/Niwa
/home/niwahang/IPL>ls -l RCB
```

Response:

```
total 16
-rw-rw-r-- 1 niwahang niwahang   0 Mar 26 20:47 Niwa
-rw-rw-r-- 1 niwahang niwahang 234 Mar 26 20:44 testResult
-rw------- 1 niwahang niwahang  78 Mar 26 20:46 testX
-rw-rw-r-- 1 niwahang niwahang  78 Mar 26 20:43 testY
-rw-rw-r-- 1 niwahang niwahang  78 Mar 26 20:43 testZ
/home/niwahang/IPL>cd 'Rajisthan Royals'
```

Description:

Since the permissions are given, creating a new file ‘Niwa’, and listing all the files in the RCB directory is possible.

7. Usage of the grep command

Task 16:

Command :

```
/home/niwahang/IPL>cd 'Rajisthan Royals'
/home/niwahang/IPL/Rajisthan Royals>grep bb testX
```

Response:

```
aaabb Aaaaa AAAAA
bbbcc Bbbbb BBBBB
```

Description:

cd is used to change the directory to Rajisthan Royals. Grep bb is used to find and display the lines containing bb in testX.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>grep -v bb testX
```

Response:

```
ff-ff Ccccc CCCCC
cccdd Ddddd DDDDD
```

Description:

Grep -v bb is used to find and display the lines not containing bb in testX.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>grep -n bb testX
```

Response:

```
1:aaabb Aaaaa AAAAA
2:bbbcc Bbbbb BBBBB
```

Description:

Grep -n bb is used to find and display the number of lines containing bb in testX.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>grep -l bb *
```

Response:

```
testX
testY
testZ
```

Description:

Grep -l bb * is used to find and display the files containing bb in them.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>grep -i bb *
```

Response:

```
testX:aaabb Aaaaa AAAAA
testX:bbbcc Bbbbb BBBBB
testY:aaabb Aaaaa AAAAA
testY:bbbcc Bbbbb BBBBB
testZ:aaabb Aaaaa AAAAA
testZ:bbbcc Bbbbb BBBBB
```

Description:

Grep -i bb * is used to find and display the lines having bb in them ignoring the case distinctions.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>grep -i BB *
```

Response:

```
testX:aaabb Aaaaa AAAAA
testX:bbbcc Bbbbb BBBBB
testY:aaabb Aaaaa AAAAA
testY:bbbcc Bbbbb BBBBB
testZ:aaabb Aaaaa AAAAA
testZ:bbbcc Bbbbb BBBBB
```

Description:

Grep -i BB * is used to find and display the lines having bb in them ignoring the case distinctions. Both give the same result.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>grep -c bb *
```

Response:

```
testX:2
testY:2
testZ:2
```

Description:

Grep -c bb * is used to find and display the number of lines having bb in them.

Command :

```
/home/niwahang/IPL/Rajisthan  Royals>grep '^A' *
```

Response:

Description:

Grep '^A' * is used to find and display the lines starting with A in them. Since no words started with A, no results were posted.

Command :

```
/home/niwahang/IPL/Rajisthan  Royals>grep -n '^' testX
```

Response:

```
1:aaabb  Aaaaa  AAAAA
2:bbbcc Bbbbb BBBBB
3:ff-ff Ccccc CCCCC
4:cccdd Ddddd DDDDD
```

Description:

Grep -n '^' is used to display the number of lines and contents of the lines in testX.

8. Aliasing

Task 17

Command :

```
/home/niwahang/IPL/Rajisthan Royals>alias lsl='ls -l'
/home/niwahang/IPL/Rajisthan Royals>alias lsR='ls -R'
```

Response:

Description:

Alias is used to give an alias to names.

Command :

```
/home/niwahang/IPL/Rajisthan Royals>cd;
/home/niwahang>lsl
```

Response:

```
total 48
-rw-rw-r-- 1 niwahang niwahang 12288 Mar 26 20:48 20048942CW1P1
drwxr-xr-x 2 niwahang niwahang 4096 Mar 26 20:13 Desktop
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Documents
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Downloads
drwxrwxr-x 7 niwahang niwahang 4096 Mar 26 20:40 IPL
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Music
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Pictures
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Public
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Templates
drwxr-xr-x 2 niwahang niwahang 4096 Mar 19 00:43 Videos
```

Description:

cd is used to change the directory to Rajisthan Royals and the alias given before lsl is used.

Command :

```
/home/niwahang>lsR
```

Response:

```
.:
20048942CW1P1 Documents IPL Pictures Templates
Desktop Downloads Music Public Videos

./Desktop:

./Documents:

./Downloads:

./IPL:
KKR 'Mumbai Indians' Punjab 'Rajisthan Royals' RCB
```

```
./IPL/KKR:

'./IPL/Mumbai Indians':

./IPL/Punjab:

'./IPL/Rajisthan Royals':
testX  testY  testZ

./IPL/RCB:
Niwa  testResult  testX  testY  testZ

./Music:

./Pictures:

./Public:

./Templates:

./Videos:
```

Description:

The alias given before i.e., lsR is used.

Command :

```
/home/niwahang>alias
```

Response:

```
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[;&|]\s*alert$//'\'')"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
alias lsR='ls -R'
alias lsl='ls -l'
```

Description:

Alias is used to check all the alias given.

Task 18

Command :

```
/home/niwahang>unalias lsl
/home/niwahang>unalias lsR
/home/niwahang>alias
```

Response:

```
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-9]\+\s*//;s/[;&|]\s*alert$//'\'')"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
```

Description:

Unalias is used to remove the alias given before. After removing the alias, the alias is checked.

Task 19

Command :

```
/home/niwahang>nano .bashrc
alias lsl='ls -l'
alias lsR='ls -R'
/home/niwahang>source .bashrc
niwahang@ubuntu:~$ exit
```

Response:

```
Exit
Script done on 2022-03-26 20:55:58-07:00 [COMMAND_EXIT_CODE="0"]
```

Description:

Nano .bashrc is used to open the environmental file. In the file, the alias is given permanently to lsl and lsR. To test if the permanent alias works, the script is exited.

Command :

```
/home/niwahang>lsl
```

Response:

```
total 68
-rw-rw-r-- 1 niwahang niwahang 31291 Mar 26 20:55 20048942CW1P1
drwxr-xr-x 2 niwahang niwahang  4096 Mar 26 20:13 Desktop
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Documents
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Downloads
drwxrwxr-x 7 niwahang niwahang  4096 Mar 26 20:40 IPL
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Music
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Pictures
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Public
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Templates
drwxr-xr-x 2 niwahang niwahang  4096 Mar 19 00:43 Videos
```

Description:

After opening the terminal after a restart. The permanent alias given before i.e., lsl is checked.

Command :

```
/home/niwahang>lsR
```

Response:

```
.:
20048942CW1P1  Documents  IPL    Pictures  Templates
Desktop       Downloads  Music  Public    Videos

./Desktop:

./Documents:

./Downloads:

./IPL:
 KKR  'Mumbai Indians'   Punjab  'Rajisthan  Royals'   RCB

./IPL/KKR:

'./IPL/Mumbai Indians':

./IPL/Punjab:

'./IPL/Rajisthan  Royals':
testX  testY  testZ

./IPL/RCB:
Niwa  testResult  testX  testY  testZ

./Music:

./Pictures:

./Public:

./Templates:

./Videos:
```

Description:

The permanent alias given before i.e., lsR is checked.

Task 20

Command :

```
/home/niwahang>nano .bashrc
alias noAllf='ls -al|wc -l'
/home/niwahang>source .bashrc
```

Response:

Description:

Nano .bashrc is used to open the environmental file. In the file, the alias is given permanently for noAllf.

Task 21

Command :

```
/home/niwahang>nano .bashrc
alias noAsubsir='ls -aR|wc -l'
/home/niwahang>source .bashrc
```

Response:

Description:

Nano .bashrc is used to open the environmental file. In the file, the alias is given permanently for noAsubsir.

Task 22

Command :

```
/home/niwahang>nano .bashrc
alias noAcs='ls-lR|grep ^[gtw]|wc -l'
/home/niwahang>source .bashrc
```

Response:

Description:

Nano .bashrc is used to open the environmental file. In the file, the alias is given permanently for noAcs.

Task 23

Command :

```
/home/niwahang>noAllf
```

Response:

```
23
```

Description:

The alias noAllf is used to count and display the number of all files in the working directory along with the hidden files.

Task 24

Command :

```
/home/niwahang>noAsubsir
```

Response:

```
616
```

Description:

The alias noAsubsir is used to count recursively and display the number of all sub-directories found in the working directory along with the hidden files.

Task 25

Command :

```
/home/niwahang>noAcs
```

Response:

```
15
```

Description:

The alias noAcs is used to count and display the number of all files in the current directory whose names start with g,t, and w.

10. Command History

Task 26

Command :

```
/home/niwahang>history 7
```

Response:

```
452  PS1='$PWD>'
453  lsl
454  lsR
455  noAllf
456  noAsubsir
457  noAcs
458  history 7
```

Description:

History is used to show the previous commands used in the terminal.

Task 27

Command :

```
/home/niwahang>!-6
```

Response:

```
lsR
.:
20048942CW1P1  Documents  IPL    Pictures  Templates
Desktop        Downloads  Music  Public    Videos

./Desktop:

./Documents:

./Downloads:

./IPL:
 KKR  'Mumbai Indians'   Punjab  'Rajisthan Royals'   RCB

./IPL/KKR:

'./IPL/Mumbai Indians':

./IPL/Punjab:

'./IPL/Rajisthan Royals':
testX  testY  testZ

./IPL/RCB:
Niwa  testResult  testX  testY  testZ

./Music:

./Pictures:

./Public:

./Templates:

./Videos:
```

Description:

! -6 is used to execute the command which was used 6 commands ago.

Task 28

Command :

```
/home/niwahang>fc -e- i
```

Response:

```
intall --help

Command 'intall' not found, did you mean:

  command 'install' from deb coreutils (8.30-3ubuntu2)

Try: sudo apt install <deb name>
```

Description:

Fc -e -i is used to execute a previous command which started with the letter i.

CONCLUSION

Thanks to the coursework given to us, I have gained more knowledge about Linux and its commands. With the help of Ubuntu in a virtual machine, the tasks were completed successfully. The tasks were recorded in the script file named 20048942CW2P1.