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Student Name: Karmaraj Giri

London Met ID: 20048909

College ID: np01cp4s210233

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Abstract

The operating systems that were available at the time were either proprietary or not free to use. At the time, Linux was primarily created as free software. It has expanded to rank among the most popular operating systems. Anyone can build new features, functions, and distributions for Linux because it is open source. Linux is incredibly stable, seldom crashes, and is malware-free because it is an open source operating system. Because it is a crucial component of most businesses and the foundation of cloud computing, it is now a necessary skill to master.

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INTRODUCTION

Linux is an open-source operating system that was created to resemble UNIX but has now evolved to support supercomputers and phones. An operating system is a piece of software that provides common services to applications while managing a computer system's hardware and resources, such as the CPU, memory, and storage. The operating system fills the space between software and the tools required to execute the task by sitting between applications and hardware. Ubuntu is an open-source operating system based on Debian that has a graphical user interface powered by the Linux kernel (GUI). As the default shell, Bash is employed. Despite having a simple user interface, the shell can complete any task with a small number of commands. The most significant and widely used commands will be covered.

Transcript

Command: To record all the command.

```
[Karmarajs-MBP:~ karmarajgiri$ cat 20048909cw2P1
```

Response:

```
Script started on Sat Aug  6 12:40:25 2022
```

Command: To stop recording command.

```
bash-3.2$ exit
exit

Script done on Sat Aug  6 12:47:40 2022
```

Command: To append data inside script

```
[Karmarajs-MBP:~ karmarajgiri$ script -a 20048909cw2P1
```

Command: To set your prompt to display the pathname of the working directory.

```
[bash-3.2$ export PS1="\'pwd\' $ "
```

Q.NO. 1 Creating a New Directory

#Task 1
Command: creating IPL directory with its sub-directories

```
[/Users/karmarajgiri> mkdir -p IPL/{'Mumbai Indians',KKR,Punjab,'Rajasthan Royals',RCB}
```

Command: Showing structure of IPL Directory

```
[/Users/karmarajgiri> tree IPL
```

Response:

Q.NO. 2 Removing Existing Files and Directories

#Task 2
Command: Changing to the KKR directory typing a relative pathname.

```
[/Users/karmarajgiri> cd IPL/KKR
```

Response:

Command: Showing current directory.

```
[/Users/karmarajgiri/IPL/KKR> pwd
```

Response:

```
/Users/karmarajgiri/IPL/KKR
```

Command: Creating two files inside the KKR directory.

```
[/Users/karmarajgiri/IPL/KKR> touch file1 file2
```

#Task 3
Command: Changing path to IPL.

```
[/Users/karmarajgiri/IPL/KKR> cd..
```

Command: Removing both files using the corresponding command(s) with the Interactive Mode (-i).

```
[/Users/karmarajgiri/IPL> rm -i KKR/{file1,file2}
```

Response:

```
[remove KKR/file1? y
[remove KKR/file2? y
```

Command: Showing absence of these two files in KKR directory.

```
[/Users/karmarajgiri/IPL> ls KKR
```

Response:

Q.NO. 3 Usage of echo command

#Task 4
Command: Print (Hello! I am a big fan of IPL) and (14 < (2+2)) using echo command.

```
[/Users/karmarajgiri/IPL> echo -e Hello! I am big fan of IPL .'\n14 < (2+2)'
```

Response:

```
Hello! I am big fan of IPL .
14 < (2+2)
```

Command: Check current directory.

```
[/Users/karmarajgiri/IPL> pwd
```

Response:

```
/Users/karmarajgiri/IPL
```

Command: Changing current path to KKR.

```
[/Users/karmarajgiri/IPL> cd KKR
```

Command: Showing current directory as KKR.

```
[/Users/karmarajgiri/IPL/KKR> pwd
```

Response:

```
 /Users/karmarajgiri/IPL/KKR
```

#Task 5
Command: Giving (pwd; cd; pwd) command.

```
[/Users/karmarajgiri/IPL/KKR> pwd; cd; pwd
```

Response:

```
 /Users/karmarajgiri/IPL/KKR
 /Users/karmarajgiri
```

Short Explanation of pwd; cd; pwd command

Pwd (print working directory) outputs the path of current working directory.
The semi colon (;) command allows executing multiple lines at once but unlike the "|"
command, it does not use output from previous command in the new command. Cd
(change directory) changes the current working directory to a desired one. If no path is
mentioned after the cd command, it goes to home directory.

#Task 6
Command: Changing current path to go to KKR.

```
[/Users/karmarajgiri> cd IPL/KKR
```

Command: Giving (pwd; cd ..; pwd; cd ..; pwd) command.

```
[/Users/karmarajgiri/IPL/KKR> pwd; cd ..; pwd; cd..; pwd
```

Response:

```
 /Users/karmarajgiri/IPL
[/Users/karmarajgiri/IPL> pwd; cd ..; pwd; cd ..; pwd
 /Users/karmarajgiri/IPL
 /Users/karmarajgiri
```

Command: Short explanation of (pwd; cd ..; pwd; cd ..;pwd) command.

pwd (print working directory) outputs the path of current working directory. the semi colon (;) command allows executing multiple lines at once but unlike the "|" command, it does not use output from previous command in the new command. cd (change directory) changes the current working directory to a desired one. ".." is a relative path, denoting the parent directory of current working directory

Q.NO. 4 Usage of ls command

#Task 7
Command: Giving (cd; pwd) command.

```
[/Users/karmarajgiri> cd; pwd
```

Response:

```
 /Users/karmarajgiri
```

Command: Short explanation to (cd; pwd) command.

Cd (change directory) command is used to change current working directory to the desired one. If no path is given after the cd command, it changes to the root directory. pwd (print working directory) outputs the path of current working directory. the semi colon (; command allows executing multiple lines at once but unlike the "|" command, it does not use output from previous command in the new command.

Command: Giving (ls) command.

```
[/Users/karmarajgiri>ls
```

Response:

```
20048909cw2p1    Documents    IPL        License.pdf    Music       Public
Desktop          Downloads    Library    Movies         Pictures
```

Short explanation of (ls) command.

ls (list) command information about the FILEs (the current directory by default).
Sort entries alphabetically if none of -cftuvSUX nor --sort is specified.

Command: Giving (ls -a) command.

```
[/Users/karmarajgiri> ls -a
```

Response:

```
.                        .Trash              Desktop       Library        Pictures
..                       .bash_history       Documents     License.pdf    Public
.CFUserTextEncoding      .bash_sessions      Downloads     Movies
.DS_Store                20048909cw2p1       IPL           Music
```

Short explanation to (ls -a) command.

ls -a command shows all the files in current directory. it does not ignore entries
starting with '.'

Command: Giving (ls -al) command.

```
[/Users/karmarajgiri> ls -al
```

Response:

```
              --
total 88
drwxr-xr-x+ 18 karmarajgiri   staff     612 Aug  6 13:39 .
drwxr-xr-x   6 root           admin     204 Jul 25 18:52 ..
-r--------   1 karmarajgiri   staff       7 Jul 25 18:48 .CFUserTextEncoding
-rw-r--r--@  1 karmarajgiri   staff   10244 Aug  5 15:26 .DS_Store
drwx------  39 karmarajgiri   staff    1326 Aug  4 12:50 .Trash
-rw-------   1 karmarajgiri   staff      34 Aug  6 13:31 .bash_history
drwx------   3 karmarajgiri   staff     102 Aug  6 12:38 .bash_sessions
-rw-r--r--   1 karmarajgiri   staff    2615 Aug  6 14:10 20048909cw2p1
drwx------@ 24 karmarajgiri   staff     816 Aug  6 14:04 Desktop
drwx------@  3 karmarajgiri   staff     102 Jul 25 18:53 Documents
drwx------+ 32 karmarajgiri   staff    1088 Aug  5 18:05 Downloads
drwxr-xr-x   7 karmarajgiri   staff     238 Aug  6 13:39 IPL
drwx------@ 59 karmarajgiri   staff    2006 Aug  6 12:46 Library
-rw-r--r--@  1 karmarajgiri   staff   19763 Jul 26 11:27 License.pdf
drwx------+  3 karmarajgiri   staff     102 Jul 25 18:48 Movies
drwx------+  3 karmarajgiri   staff     102 Jul 25 18:48 Music
drwx------+  5 karmarajgiri   staff     170 Aug  5 17:49 Pictures
drwxr-xr-x+  4 karmarajgiri   staff     136 Jul 25 18:48 Public
```

Command: Giving short explanation to (ls -al) command.

ls -al command is displays all directories with detailed information like permission, size, owner, time of last modification etc.

#Task 8
Command: Giving (cd;pwd;cd cw2;pwd) command.

```
[/Users/karmarajgiri> cd;pwd;cd cw2;pwd
```

Response:

```
/Users/karmarajgiri
/Users/karmarajgiri/cw2
```

Short explanation of (cd;pwd;cd cw2;pwd) command.

cd command changes current working directory to desired directory. if no path is given after the cd command, it changes current working directory to the home directory. the ";" command is used to execute multiple commands in a single line. cd cw2 changes current directory to cw2 with a relative path

Command: Giving (ls -R) command.

```
[/Users/karmarajgiri/cw2> ls -R
```

Response:

Short explanation of (ls -R) command.

ls -R command lists all the folders, and files and folders inside them recursively. the
option -R denotes recursive

Q.NO 5 Usage of the cat command

Command: Changing current path to RCB.

```
[/Users/karmarajgiri/cw2> cd /IPL/RCB
```

Response:

#Task 9
Command: Creating testX file using cat command.

```
[/Users/karmarajgiri/IPL/RCB> cat >testX
 aaabb   Aaaaa   AAAAA
 bbbcc   Bbbbb   BBBBB
 ff—ff   Ccccc   CCCCC
 cccdd   Ddddd   DDDDD
 ^C
```

Command: Creating testY file using cat command.

```
[/Users/karmarajgiri/IPL/RCB> cat >testY
 aaabb   Aaaaa   AAAAA
 bbbcc   Bbbbb   BBBBB
 ff—ff   Ccccc   CCCCC
 cccdd   Ddddd   DDDDD
 ^C
```

Command: Creating testZ file using cat command.

```
[/Users/karmarajgiri/IPL/RCB> cat >testZ
 aaabb   Aaaaa   AAAAA
 bbbcc   Bbbbb   BBBBB
 ff—ff   Ccccc   CCCCC
 cccdd   Ddddd   DDDDD
 ^C
```

#Task 10
Command: Displaying testX file using cat utility.

```
[/Users/karmarajgiri/IPL/RCB> cat testX
```

Response:

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

Command: Displaying testY file using cat utility.

```
[/Users/karmarajgiri/IPL/RCB> cat testY
```

Response:

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

Command: Displaying testZ file using cat utility.

```
[/Users/karmarajgiri/IPL/RCB> cat testZ
```

Response:

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

#Task 11
Command: Copying testX, testY and testZ file to 'Rajsthan Royals' directory.

```
[/Users/karmarajgiri/IPL/RCB> cp testX testY testZ../Rajasthan\ Royals/
```

Response:

#Task 12
Command: Giving (cat testX testY testZ) command.

```
[/Users/karmarajgiri/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
```

Command: Giving (cat testX testY testZ > testResult) command.

```
[/Users/karmarajgiri/IPL/RCB> cat testX testY testZ >testResult
```

Response:

Command: Displaying testResult using cat considering it is correct.

```
[/Users/karmarajgiri/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
```

#Task 13
Command: Giving (cat test[XYZ]) command.

```
[/Users/karmarajgiri/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
```

Command: Giving short explanation to cat test[XYZ]

cat test[XYZ] displays result of all testX, testY, and testZ files. it is called regex(regular expressions). here, [XYZ] returns true if the file contains either X, or Y, or Z. Hence, the testResult file output was not shown.

Q.NO 6 Usage of the chmod command

#Task 14
Command: Display access permissions for files in RCB.

```
[/Users/karmarajgiri/IPL/RCB> ls -l
```

Response:

```
total 32
-rw-r--r--  1 karmarajgiri  staff  258 Aug  6 16:56 testResult
-rw-r--r--  1 karmarajgiri  staff   86 Aug  6 16:50 testX
-rw-r--r--  1 karmarajgiri  staff   86 Aug  6 16:51 testY
-rw-r--r--  1 karmarajgiri  staff   86 Aug  6 16:52 testZ
```

Command: Removing all access permission for testX file.

```
[/Users/karmarajgiri/IPL/RCB> chmod 000 testX
```

Command: Display access pemission for textX.

```
[/Users/karmarajgiri/IPL/RCB> ls -l testX
```

Response:

```
----------  1 karmarajgiri  staff   86 Aug  6 16:50 testX
```

Command: Trying to read testX file.

```
[/Users/karmarajgiri/IPL/RCB> cat testX
```

Response:

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

Command: Trying to write in testX file.

```
[/Users/karmarajgiri/IPL/RCB> cat>>testX
```

Response:

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

Command: Adding read and write access permission in testX file to user.

```
[/Users/karmarajgiri/IPL/RCB> chmod 600 testX
```

Command: Displaying access permission for testX file.

```
[/Users/karmarajgiri/IPL/RCB> ls -l testX
```

Response:

```
-rw-------   1 karmarajgiri   staff   86 Aug   6 16:50 testX
```

Command: Trying to read testX file.

```
[/Users/karmarajgiri/IPL/RCB> cat testX
```

Response:

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

Command: Trying to write in testX file.

```
[/Users/karmarajgiri/IPL/RCB> cat>>testX
```

#Task 15
Command: Changing the path to IPL.

```
[/Users/karmarajgiri/IPL/RCB> cd ..
```

Command: Displaying all access permission for RCB.

```
[/Users/karmarajgiri/IPL> ls -ld RCB
```

Response:

```
drwxr-xr-x   6 karmarajgiri   staff   204 Aug   6 16:56 RCB
```

Command: Removing all access permission for RCB directory.

```
[/Users/karmarajgiri/IPL> chmod 000 RCB
```

Response:

Command: Displaying all access permission for RCB.

```
[/Users/karmarajgiri/IPL> ls -ld RCB
```

Response:

```
d---------   6 karmarajgiri   staff   204 Aug   6 16:56 RCB
```

Command: Trying to read a file from RCB.

```
[/Users/karmarajgiri/IPL> cat RCB/testX
```

Response:

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

Command: Creating new file named testFile.

```
[/Users/karmarajgiri/IPL> touch RCB/testFile
```

Response:

```
touch: RCB/testFile: Permission denied
```

Command: Trying to search in RCB.

```
[/Users/karmarajgiri/IPL> ls RCB/test[XYZ]
```

Response:

```
ls: RCB/test[XYZ]: Permission denied
```

Command: Adding read,write and execute access permission for user in RCB.

```
[/Users/karmarajgiri/IPL> chmod 764 RCB
```

Command: Displaying all access permission for RCB.

```
[/Users/karmarajgiri/IPL> ls -ld RCB
```

Response:

```
drwxrw-r--   6 karmarajgiri   staff   204 Aug   6 16:56 RCB
```

Command: Trying to read a file from RCB.

```
[/Users/karmarajgiri/IPL> cat RCB/testX
```

Response:

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

Command: Trying to put a file into RCB.

```
[/Users/karmarajgiri/IPL> touch RCB/testFile
```

Command: Trying to search in RCB.

```
[/Users/karmarajgiri/IPL> ls RCB/testF*
```

Response:

```
RCB/testFile
```

Q.NO 7 Usage of the grep command

Command: Changing the path to "Rajsthan Royals".

```
[/Users/karmarajgiri/IPL> cd Rajasthan\Royals
```

#Task 16
Command: Using (grep bb testX) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep bb testX
```

Response:

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

Short explanation (grep bb testX) command.

grep bb testX shows all words containing bb(sequence and case sensitive) in testX file

Command: Using (grep -v bb testX) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep -v bb testX
```

Response:

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

Short explanation (grep -v bb testX) command.

grep -v bb testX shows all words that do not containin bb(sequence and case sensitive) in testX file

Command: Using (grep -n bb testX) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep -n bb testX
```

Response:

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

Short explanation (grep -n bb testX) command.

grep bb testX shows all words containing bb(sequence and case sensitive), with the line number in testX file

Command: Using (grep -l bb *) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep -l bb *
```

Response:

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

Short explanation (grep -l bb *) command.

grep -| bb * command shows all files in the current directory that contain "bb" (sequence and case sensitive). "*" is a regular expression, which denotes all

Command: Using (grep -i bb *) command.

```
[/Users/karmarajgiri/IPL/Rajasthan 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
```

Short explanation (grep -i bb *) command

grep -i bb * commands shows all files in the current directory that contain "bb" (sequence sensitive). "i" denotes case insensivive."*" is a regular expression, which denotes all

Command: Using (grep -i BB *) command.

```
[/Users/karmarajgiri/IPL/Rajasthan 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
```

Short explanation (grep -i BB *) command.

grep -i BB * commands shows all files in the current directory that contain "bb" (sequence sensitive). "i" denotes case insensivive."*" is a regular expression, which denotes all

Command: Using (grep -c bb *) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep -c bb *
```

Response:

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

Short explanation (grep -c bb *) command

grep -c bb * commands count occurrence of "bb"(sequence and case sensitive) in all files in the current directory. "*" is a regular expression, which denotes all

Command: Using (grep '^A' *) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep '^A' *
```

Response:

Short explanation (grep '^A' *) command.

grep '^A' * command shows occurance of all words starting with 'A' (case sensitive) in the current directory. here, '*' and '^' are regex(regular expressions), where '^A' denotes that the word starts with 'A', and '*' denotes all files

Command: Using (grep -n '^' testX) command.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> grep -n '^' testX
```

Response:

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

Short explanation (grep -n '^' testX) command.

grep -n '^' testX shows the content of testX file along with the line number. here, '^' is a regex(regular expression) denoting the start of line. as a result, it splits all lines and the desired output is achieved

Q.NO 8 Aliasing

#Task 17
Command: Defining two alises for ls.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> alias lsl='ls -l'; alias lsR='ls -R'
```

Command: Showing that the system stores the lsl and lsR alises.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> alias
```

Response:

```
alias lsR='ls -R'
alias lsl='ls -l'
```

Command: Changing current directory to root directory.

```
[/Users/karmarajgiri/IPL/Rajasthan Royals> cd
```

Response:

```
[/Users/karmarajgiri>
```

Command: Using lsl and lsR alias in home directory.

```
[/Users/karmarajgiri> lsl;lsR
```

Response1:

```
total 72
-rw-r--r--    1 karmarajgiri  staff  12413 Aug  6 18:16 20048909cw2p1
drwx------@ 24 karmarajgiri  staff    816 Aug  6 18:15 Desktop
drwx------@  3 karmarajgiri  staff    102 Jul 25 18:53 Documents
drwx------+ 32 karmarajgiri  staff   1088 Aug  5 18:05 Downloads
drwxr-xr-x   8 karmarajgiri  staff    272 Aug  6 14:53 IPL
drwx------@ 59 karmarajgiri  staff   2006 Aug  6 12:46 Library
-rw-r--r--@  1 karmarajgiri  staff  19763 Jul 26 11:27 License.pdf
drwx------+  3 karmarajgiri  staff    102 Jul 25 18:48 Movies
drwx------+  3 karmarajgiri  staff    102 Jul 25 18:48 Music
drwx------+  5 karmarajgiri  staff    170 Aug  5 17:49 Pictures
drwxr-xr-x+  4 karmarajgiri  staff    136 Jul 25 18:48 Public
drwxr-xr-x   2 karmarajgiri  staff     68 Aug  6 14:49 cw2
20048909cw2p1    Documents    IPL          License.pdf    Music        Public
Desktop          Downloads    Library      Movies         Pictures     cw2

./Desktop:
CV_Nabin-Shrestha.pdf                      Screen Shot 2022-08-06 at 5.57.19 PM.png
CW 2                                       Screen Shot 2022-08-06 at 6.05.34 PM.png
CW 2.zip                                   Screen Shot 2022-08-06 at 6.14.23 PM.png
```

```
./Desktop/CW 2:
20048873 Bishal Aryal
20048873 Bishal Aryal.docx
20048873 Bishal Aryal.zip
20049415 prakash chand
20049415 prakash chand.zip
2018_19_A_CS5001NI_A3_CW_Coursework_17032182_Akin_Shrestha_pdf.pdf
CS5001NA - Network and Operating System Y21 Autumn (1st Sit) - CW2 QP(part ii).docx
NOS_CW2_APPROACH2.docx
avhi.txt
nos cw2p1.docx
req

./Desktop/CW 2/20048873 Bishal Aryal:
Part 1   Part 2

./Desktop/CW 2/20048873 Bishal Aryal/Part 1:
20048873cw2P1                    20048874 Bishal Aryal.pdf

./Desktop/CW 2/20048873 Bishal Aryal/Part 2:
20048873 Bishal Aryal.pdf        cw2

./Desktop/CW 2/20048873 Bishal Aryal/Part 2/cw2:
AD              AY              CW2P2.sh        FM              JL

./Desktop/CW 2/20049415 prakash chand:
part1.zip       part2           part2.zip

./Desktop/CW 2/20049415 prakash chand/part2:
20048873 Biishal.docx                   20049415 Prakash Chand.pdf
20049415 Prakash Chand - Copy.pdf       20049415 Prakash Chand.zip

./Desktop/CW 2/req:
process architecture    sdafads.png

./Desktop/Motorbike.app:
Contents

./Desktop/Motorbike.app/Contents:
Data            Frameworks      Info.plist      MacOS           Plugins         Resources       _CodeSignature

./Desktop/Motorbike.app/Contents/Data:
Managed

./Desktop/Motorbike.app/Contents/Data/Managed:
etc

./Desktop/Motorbike.app/Contents/Data/Managed/etc:
mono

./Desktop/Motorbike.app/Contents/Data/Managed/etc/mono:
1.0             2.0             browscap.ini    config          mconfig

./Desktop/Motorbike.app/Contents/Data/Managed/etc/mono/1.0:
DefaultWsdlHelpGenerator.aspx   machine.config

./Desktop/Motorbike.app/Contents/Data/Managed/etc/mono/2.0:
Browsers                        machine.config                  web.config
DefaultWsdlHelpGenerator.aspx   settings.map

./Desktop/Motorbike.app/Contents/Data/Managed/etc/mono/2.0/Browsers:
Compat.browser

./Desktop/Motorbike.app/Contents/Data/Managed/etc/mono/mconfig:
config.xml
```

```
./Desktop/Motorbike.app/Contents/Frameworks:
MonoEmbedRuntime

./Desktop/Motorbike.app/Contents/Frameworks/MonoEmbedRuntime:
osx

./Desktop/Motorbike.app/Contents/Frameworks/MonoEmbedRuntime/osx:
libMonoPosixHelper.dylib        libmono.0.dylib

./Desktop/Motorbike.app/Contents/MacOS:
Motorbike

./Desktop/Motorbike.app/Contents/Plugins:
unibillosx.bundle

./Desktop/Motorbike.app/Contents/Plugins/unibillosx.bundle:
Contents        Contents.meta

./Desktop/Motorbike.app/Contents/Plugins/unibillosx.bundle/Contents:
Info.plist      Info.plist.meta MacOS           MacOS.meta      Resources       Resources.meta

./Desktop/Motorbike.app/Contents/Plugins/unibillosx.bundle/Contents/MacOS:
unibillosx      unibillosx.meta

./Desktop/Motorbike.app/Contents/Plugins/unibillosx.bundle/Contents/Resources:
en.lproj        en.lproj.meta

./Desktop/Motorbike.app/Contents/Plugins/unibillosx.bundle/Contents/Resources/en.lproj:
InfoPlist.strings       InfoPlist.strings.meta

./Desktop/Motorbike.app/Contents/Resources:
Ageia.tif                   MainMenu.nib            ScreenSelector.png
Data                        Mono.tif                UnityPlayerIcon.png
DefaultPreferences.plist    PlayerIcon.icns         unity default resources
KeyConfig.nib               ScreenSelector.nib

./Desktop/Motorbike.app/Contents/Resources/Data:
Managed                     level4                  sharedassets1.resource
Resources                   resources.assets        sharedassets2.assets
globalgamemanagers          resources.assets.resS   sharedassets2.assets.resS
globalgamemanagers.assets   sharedassets0.assets    sharedassets3.assets
level0                      sharedassets0.assets.resS   sharedassets3.assets.resS
level1                      sharedassets0.resource  sharedassets4.assets
level2                      sharedassets1.assets    sharedassets4.assets.resS
level3                      sharedassets1.assets.resS

./Desktop/Motorbike.app/Contents/Resources/Data/Managed:
ArabicSupport.dll                   PayPalXCLibrary.dll         System.dll
Assembly-CSharp-firstpass.dll       System.Configuration.dll    UnityEngine.Networking.dll
Assembly-CSharp.dll                 System.Core.dll             UnityEngine.UI.dll
Assembly-UnityScript-firstpass.dll  System.Data.dll             UnityEngine.dll
Assembly-UnityScript.dll            System.Drawing.dll          UnityEngine.dll.mdb
Boo.Lang.dll                        System.EnterpriseServices.dll   UnityEngine.xml
Mono.Data.Sqlite.dll                System.Security.dll         UnityScript.Lang.dll
Mono.Data.Tds.dll                   System.Transactions.dll     mscorlib.dll
Mono.Posix.dll                      System.Web.Services.dll     unibill.dll
Mono.Security.dll                   System.Web.dll
Mono.Web.dll                        System.Xml.dll

./Desktop/Motorbike.app/Contents/Resources/Data/Resources:
unity_builtin_extra

./Desktop/Motorbike.app/Contents/Resources/KeyConfig.nib:
classes.nib             info.nib                keyedobjects.nib
```

```
./Desktop/NOS:
16      17      18      19      20      21      22      23      CW

./Desktop/NOS/16:
Lab 16.docx.pdf              Lecture (Week 16).pptx.pdf       Lecture 16.mp4

./Desktop/NOS/17:
Lecture (Week 17).pptx.pdf      Tutorial 17.pdf              Week 17 (Lab).docx.pdf

./Desktop/NOS/18:
Shell Scripting – Lecture 18.pptx.pdf    Week 18 workshop.docx.pdf          week 18.mp4

./Desktop/NOS/19:
Shell Scripting – Lecture 19.pptx.pdf

./Desktop/NOS/20:
File _Management hall 1.pptx.pdf        Week 20 workshop.docx.pdf
Tutorial 20.docx.pdf                    Workshop 20.docx.pdf

./Desktop/NOS/21:
MCQ.ppt.pdf                     Memory Manager.mp4           workshop 21.docx.pdf
Memory Management.pptx.pdf      workshop 21 (solution).docx.pdf

./Desktop/NOS/22:
Process Management.docx.pdf      Process Management.pptx.pdf      workshop 22.docx.pdf

./Desktop/NOS/23:
Device Management – Lecture 23.pptx.pdf

./Desktop/NOS/CW:
CS5001NA – Network and Operating System Y21 Autumn (1st SIT) – CW2 QP Part1 (1).docx
CS5001NA – Network and Operating System Y21 Autumn (1st Sit) – CW2 QP(part ii) (1).docx
CW2 (Part ii) Format.docx
CW2 Part A Format.docx
~$5001NA – Network and Operating System Y21 Autumn (1st SIT) – CW2 QP Part1 (1).docx

./Desktop/SS:
1.png           2.png           3.png           4 copy 2.png    4 copy.png      4.png

./Documents:

./Downloads:
20220617_144600.jpg              MS_office                    VSCode-darwin.zip
20220617_144626.jpg              MS_office 2                  Year 3 IT Class Schedule.pdf
Anaconda3-2022.05-MacOSX-x86_64.pkg  MS_office-20220726T060659Z-001.zip  cooltext416831457390844.png
August_2022_Resit_Exam_Schedule-IT.pdf  MS_office-20220726T060659Z-002.zip  facebook4mac.zip
CV_Nabin-Shrestha (5).docx       MS_office-20220726T060659Z-003.zip  googlechrome.dmg
CV_Nabin-Shrestha.docx           Messenger.97.11.116.dmg      winehq-stable-5.0.pkg
CV_Nabin-Shrestha.odt            Motorbike.zip                ~$_Nabin-Shrestha (5).docx
Facebook 4 Mac.app               Opera Installer.app          ~$_Nabin-Shrestha.docx
Lecture 16.mp4                   Pixelmator.app
Lecture 23.mp4                   Pixelmator.zip
```

#Task 18
Command: Removing lsl and lsR aliases.

Response:

Command: Showing that the system doesn't store lsl and lsR aliases.

Response:

#Task 19
Command: Adding 'lsl' command as 'ls -al' and 'lsR' command as 'ls -R' inside system

file name as .bashrc. Inside bashrc file go to (# enable color support of ls and add handy aliases) and write the command.

```
/Users/karmarajgiri> cat>> .bashrc
alias noAltf='ls -a | wc -l'

alias noAsubsir='ls -aR | wc -l'
alias noAcs='ls -aR | grep ^[gtw] | wc -l'
^C
```

Command: Load the store file in .bashrc and exit, logout and login.

```
exit
```

Command: Run the command lsl and lsR to check system still store the command.

```
alias noAsubsir='ls -aR | wc -l'
```

Response1:

```
PS1='$PWD>'
mkdir -p IPL/{'Mumbai Indians',KKR,Punjab,'Rajasthan Royals',RCB}
tree IPL
cd IPL/KKR
pwd
touch file1 file2
cd..
cd ..
rm -i KKR/{file1,file2}
Is KKR
ls KKR
echo -e Hello! I am big fan of IPL .'\n14 < (2+2)'
pwd
cd KKR
pwd
pwd; cd; pwd
cd IPL/KKR
pwd; cd ..; pwd; cd..; pwd
pwd; cd ..; pwd; cd ..; pwd
cd karmarajgiri
cd; pwd
ls
ls -a
ls -al
cd;pwd;cd cw2;pwd
cd;pwd;cd cw2;pwd
cd;pwd;cd cw2;pwd
ls -R
cd /IPL/RCB
cd /IPL/RCB
cd /IPL/RCB
cd
cd /IPL/RCB
cd IPL/RCB
cat $ textX
$ cat $ testX
cat $ testX
cat testX
cat >testX
cat >testX
cat >testY
cat >testZ
cat testX
cat testY
cat testZ
cp testX testY testZ../Rajasthan\ Royals/
cat testX testY testZ
cat testX testY testZ >testResult
cat testResult
cat test[XYZ]
ls -1
```

#Task 20
Command: The noAllf alias for a group of commands counting and displaying the

number of all files in any working directory (including ones with invisible file names) for temporary.'

```
/Users/karmarajgiri> alias noAltf='ls -a | wc -l'
```

#Task 21
Command: The noAsubsir alias 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) for temporary.

```
/Users/karmarajgiri> alias noAsubsir='ls -aR | wc -l'
```

#Task 22
Command: The noAcs alias 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 for temporary.

```
/Users/karmarajgiri> alias noAcs='ls -aR | grep ^[gtw] | wc -l'
```

Q.NO 9 Usage of your own commands

#Task 23
Command: Usage of noAllf commands.

```
/Users/karmarajgiri> noAltf
```

Response:

#Task 24
Command: Usage of noAsubsir commands.

```
/Users/karmarajgiri> noAsubsir
```

Response:

#Task 25
Command: Usage of noAcs commands.

```
/Users/karmarajgiri> noAcs
```

Response:

Q.NO 10 Command history

#Task 26
Command: Listing last commands executed giving the history command.

```
/Users/karmarajgiri> history
```

Response:

```
 1  exit
 2  export PS1="\'pwd\' $ "
 3  exit
 4  export PS1="\'pwd\' $ "
 5  PS1='$PWD>'
 6   mkdir -p IPL/{'Mumbai Indians',KKR,Punjab,'Rajasthan Royals',RCB}
 7  tree IPL
 8  cd IPL/KKR
 9  pwd
10  touch file1 file2
11  cd..
12  cd ..
13  rm -i KKR/{file1,file2}
14  ls KKR
15  ls KKR
16  echo -e Hello! I am big fan of IPL .'\n14 < (2+2)'
17  pwd
18  cd KKR
19  pwd
20  pwd; cd; pwd
21  cd IPL/KKR
22  pwd; cd ..; pwd; cd..; pwd
23  pwd; cd ..; pwd; cd ..; pwd
24  cd karmarajgiri
25  cd; pwd
26  ls
27  ls -a
28  ls -al
29  cd;pwd;cd cw2;pwd
30  cd;pwd;cd cw2;pwd
31  cd;pwd;cd cw2;pwd
32  ls -R
33  cd /IPL/RCB
34  cd /IPL/RCB
35  cd /IPL/RCB
36  cd
37  cd /IPL/RCB
38  cd IPL/RCB
39  cat $ textX
40  $ cat $ testX
41  cat $ testX
42  cat testX
43  cat >testX
44  cat >testX
45  cat >testY
46  cat >testZ
47  cat testX
48  cat testY
49  cat testZ
50  cp testX testY testZ../Rajasthan\ Royals/
51  cat testX testY testZ
52  cat testX testY testZ >testResult
53  cat testResult
54  cat test[XYZ]
55  ls -l
56  chmod 000 testX
57  ls -l testX
58  cat testX
59  cat>>testX
60  chmod 600 testX
61  ls -l testX
62  cat testX
63  cat>>testX
64  cd ..
65  ls -ld RCB
66  chmod 000 RCB
67  ls -ld RCB
68  cat RCB/testX
69  touch RCB/testFile
70  ls RCB/test[XYZ]
71  chmod 764 RCB
72  ls -ld RCB
73  cat RCB/testX
74  touch RCB/testFile
```

```
 75    ls RCB/testF*
 76    cd Rajasthan\Royals
 77    cd Rajasthan\Royals/
 78    cd Rajasthan\ Royals/
 79    grep bb testX
 80    grep bb testX
 81    grep bb testX
 82    cd
 83    IPL/RCB
 84    cd IPL/RCB
 85    cp testX testY testZ ../Rajasthan\ Royals/
 86    cd ..
 87    cd Rajasthan\Royals
 88    cd Rajasthan\ Royals
 89    grep bb testX
 90    grep -v bb testX
 91    grep -n bb testX
 92    grep -l bb *
 93    grep -i bb *
 94    grep -i BB *
 95    grep -c bb *
 96    grep '^A' *
 97    grep '^A'*
 98    grep '^A' *
 99    -n '^' testX
100    grep -n '^' testX
101    alias lsl='ls -l'; alias lsR='ls -R'
102    alias
103    cd
104    lsl;lsR
105    unalias lsl lsR
106    alias
107    cat>> .bashrc
108    exit
109   export PS1="\'pwd\' $ "
110   PS1='$PWD>'
111    lsl;lsR
112    alias noAltf='ls -a | wc -l'
113    alias noAsubsir='ls -aR | wc -l'
114    alias noAcs='ls -aR | grep ^[gtw] | wc -l'
115    noAltf
116    cat>> .bashrc
117    noAltf
118    cat>> .bashrc
119    noAltf
120    noAsubsir
121    noAcs
122    history
```

#Task 27

Command: Re-executing the command given 6 commands ago.

```
/Users/karmarajgiri> !-6
```

Response:

```
            --
  noAltf
bash: noAltf: command not found
/Users/karmarajgiri> !1
```

Conclusion

In conclusion, Linux is a fantastic operating system with a graphical user interface (GUI) and an incredibly strong Command Line Interface (CLI) (GUI). Through real-world examples, the project assisted in learning the fundamentals of Linux CLI. It also aided in the understanding of file handling, showing output, handling permissions and access, and aliasing.

Bibliography