Elec Eng 3EY4
Lab 1 – Linux Commands

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Objective 1 Introduction to Linux and Your Linux Cheat Sheet

Lab 1: Linux Command Cheat Sheet

Navigation

Display current directory path	pwd
List files & directories in current directory	ls ls -a (hidden files)
change to specified directory	cd [directory]
move up directory level	cd ..
go to root directory	cd /

File functions

create a new empty file or update time stamp	touch [file]
open file in text editor	nano [file]
Display file contents	cat [file]
find term in a file	grep -r [term] ~ grep -i [term] (case sensitive)
run a Python file	python3 [file]
find file	find [path] -name "[pattern]"

Sort

Alphabetically	sort [file]
reverse order	sort -r [file]
numerically	sort -n [file]
month sort	sort -M [file]

Piping | > / >>

output, overwrite file	[command] > [file]
output, append file	[command] >> [file]
Pipe output 1 to command	[com 1]	[com 2]

Objective 3: Exercise on Linux Commands

Steps 1 – 4

```
root@Rani: //root/home_rani    ×    +    ∨

root@Rani://root# mkdir home_ranir
root@Rani://root# ls
home_ranir
root@Rani://root# cd home_ranir
root@Rani://root/home_ranir# mkdir ranir_folderA
root@Rani://root/home_ranir# mkdir ranir_folderB
root@Rani://root/home_ranir# mkdir ranir_backup
root@Rani://root/home_ranir# ls
ranir_backup   ranir_folderA   ranir_folderB
root@Rani://root/home_ranir#
```

Correction: to see hidden files, ls -a

```
root@Rani://root# ls -a
.   ..   .bashrc   .local   .motd_shown   .profile   .ssh
root@Rani://root#
```

```
root@Rani://root# nano MyCalendar.txt
root@Rani://root# nano MyFamily.txt
root@Rani://root# nano MyDailySteps.txt
root@Rani://root# ^C
root@Rani://root# nano MyToDoList.txt
root@Rani://root# cat MyCalendar.txt
March
August
July
February
October
May
September
June
April
root@Rani://root# cat MyFamily.txt
Brandon
Sandra
Peter
Jennifer
Graham
root@Rani://root# cat MyDailySteps.txt
5000
1800
17000
560
900
root@Rani://root# cat MyToDoList.txt
I make my bed in the morning
I eat pancakes for breakfast
I finish my homework in the evening
I go to dinner later in the evening
root@Rani://root#
```

Python codes: calculation.py and MyInfo.py

Calculation.py

```
root@Rani: //root                    X        +    ∨

  GNU nano 7.2                                              home_ranir/rani
num1= input("enter number 1")
num2 = input("enter number 2")
print(num1+num2)
```

MyInfo.py

```
root@Rani: //root        X    +  ∨                                                        −   □   X

  GNU nano 7.2                         home_ranir/ranir_backup/MyInfo.py
print("Hi, my name is  Richa Rani\nI am in my third year of Electrical/Computer Engineering\nMy student number is 400311161\nmy MacID is ranir")
```

Step 10

```
root@Rani://root# nano home_ranir/ranir_backup/calculation.py
root@Rani://root# nano home_ranir/ranir_backup/MyInfo.py
root@Rani://root# python3 home_ranir/ranir_backup/MyInfo.py
Hi, my name is  Richa Rani
I am in my third year of Electrical/Computer Engineering
My student number is 400311161
my MacID is ranir
root@Rani://root# python3 home_ranir/ranir_backup/calculation.py
enter number 13
enter number 24
34
root@Rani://root# cat home_ranir/ranir_backup/calculation.py
num1= input("enter number 1")
num2 = input("enter number 2")
print(num1+num2)

root@Rani://root# cat home_ranir/ranir_backup/MyInfo.py
print("Hi, my name is  Richa Rani\nI am in my third year of Electrical/Computer Engineering\nMy student number is 400311161\nmy MacID is ranir")
root@Rani://root#
```

Steps 12 − 16

```
root@Rani://root/home_ranir# ls
ranir_backup   ranir_folderA   ranir_folderB
root@Rani://root/home_ranir# mv ranir_folderA ranir_textfiles
root@Rani://root/home_ranir# ls
ranir_backup   ranir_folderB   ranir_textfiles
root@Rani://root/home_ranir# cd ..
root@Rani://root# ls
MyCalendar.txt  MyDailySteps.txt  MyFamily.txt  MyToDoList.txt  home_ranir
root@Rani://root# mv *.txt home_ranir/ranir_textfiles
root@Rani://root# ls home_ranir/ranir_textfiles
MyCalendar.txt  MyDailySteps.txt  MyFamily.txt  MyToDoList.txt
root@Rani://root# cd home_ranir/ranir_backup
root@Rani://root/home_ranir/ranir_backup# mv calculation.py calculation_2#s.py
root@Rani://root/home_ranir/ranir_backup# ls
MyInfo.py  calculation_2#s.py
root@Rani://root/home_ranir/ranir_backup# cd ..
root@Rani://root/home_ranir# mv ranir_folderB ranir_pythonfiles
root@Rani://root/home_ranir# ls
ranir_backup   ranir_pythonfiles   ranir_textfiles
root@Rani://root/home_ranir# mv ranir_backup/*.py ranir_pythonfiles
root@Rani://root/home_ranir# ls ranir_pythonfiles
MyInfo.py  calculation_2#s.py
root@Rani://root/home_ranir# 
```

Steps 18 − 21

```
root@Rani://root/home_ranir/ranir_backup# touch Richa_Rani
root@Rani://root/home_ranir/ranir_backup# touch ranir_FileX
root@Rani://root/home_ranir/ranir_backup# touch ranir_FileY
root@Rani://root/home_ranir/ranir_backup# ls
Richa_Rani   ranir_FileX   ranir_FileY
root@Rani://root/home_ranir/ranir_backup# cat ranir_FileY >Richa_Rani
root@Rani://root/home_ranir/ranir_backup# cp Richa_Rani ~/home_ranir
root@Rani://root/home_ranir/ranir_backup# cp ranir_FileX ~/home_ranir
root@Rani://root/home_ranir/ranir_backup# ls home_ranir
ls: cannot access 'home_ranir': No such file or directory
root@Rani://root/home_ranir/ranir_backup# ls ~/home_ranir
Richa_Rani   ranir_FileX   ranir_backup   ranir_pythonfiles   ranir_textfiles
root@Rani://root/home_ranir/ranir_backup# rm -r ranir_backup
rm: cannot remove 'ranir_backup': No such file or directory
root@Rani://root/home_ranir/ranir_backup# cd ..
root@Rani://root/home_ranir# rmdir -r ranir_backup
rmdir: invalid option -- 'r'
Try 'rmdir --help' for more information.
root@Rani://root/home_ranir# rm -r ranir_backup
root@Rani://root/home_ranir# ls
Richa_Rani   ranir_FileX   ranir_pythonfiles   ranir_textfiles
root@Rani://root/home_ranir# 
```

Steps 23 – 26

```
root@Rani://root/home_ranir/ranir_textfiles# sort -M MyCalendar.txt
February
March
April
May
June
July
August
September
October
root@Rani://root/home_ranir/ranir_textfiles# sort -r MyFamily.txt
Sandra
Peter
Jennifer
Graham
root@Rani://root/home_ranir/ranir_textfiles# sort -r MyFamily.txt >MyFamily_alphaOrder.txt
root@Rani://root/home_ranir/ranir_textfiles# ls
MyCalendar.txt  MyDailySteps.txt  MyFamily.txt  MyFamily_alphaOrder.txt  MyToDoList.txt
root@Rani://root/home_ranir/ranir_textfiles# cat MyFamily_alphaOrder.txt
Sandra
Peter
Jennifer
Graham
Brandon
root@Rani://root/home_ranir/ranir_textfiles# rm MyFamily.txt
root@Rani://root/home_ranir/ranir_textfiles# ls
MyCalendar.txt  MyDailySteps.txt  MyFamily_alphaOrder.txt  MyToDoList.txt
root@Rani://root/home_ranir/ranir_textfiles# sort -n MyDailySteps.txt
560
900
1800
5000
17000
root@Rani://root/home_ranir/ranir_textfiles#
```

Steps 28 – 31: List the number of each word in Step 31

```
root@Rani://root/home_ranir/ranir_textfiles# cd //root
root@Rani://root# find ~ -name "*.txt"
/root/home_ranir/ranir_textfiles/MyCalendar.txt
/root/home_ranir/ranir_textfiles/MyDailySteps.txt
/root/home_ranir/ranir_textfiles/MyFamily_alphaOrder.txt
/root/home_ranir/ranir_textfiles/MyToDoList.txt
root@Rani://root# find ~ -name "*.py"
/root/home_ranir/ranir_pythonfiles/calculation_2#s.py
/root/home_ranir/ranir_pythonfiles/MyInfo.py
```

```
/root/home_ranir/ranir_textfiles/MyFamily_alphaOrder.txt:Sandra
root@Rani://root/home_ranir/ranir_textfiles# grep -r my ~
/root/home_ranir/ranir_textfiles/MyToDoList.txt:I make my bed in the morning
/root/home_ranir/ranir_textfiles/MyToDoList.txt:I finish my homework in the evening
/root/home_ranir/ranir_pythonfiles/MyInfo.py:print("Hi, my name is  Richa Rani\nI am in my third year of Electrical/Comp
uter Engineering\nMy student number is 400311161\nmy MacID is ranir")
root@Rani://root/home_ranir/ranir_textfiles# grep -r evening ~
/root/home_ranir/ranir_textfiles/MyToDoList.txt:I finish my homework in the evening
/root/home_ranir/ranir_textfiles/MyToDoList.txt:I go to dinner later in the evening
root@Rani://root/home_ranir/ranir_textfiles#
```

Instances

Word	Instances
Sandra	1
My	5
Evening	2