

Submitted by:

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AIM: To study the basic commands in Linux.

THEORY:

File Commands

1. ls Directory listing
2. ls -al Formatted listing with hidden files
3. ls -lt Sorting the Formatted listing by time modification
4. cd dir Change directory to dir
5. cd Change to home directory
6. pwd Show current working directory
7. mkdir dir Creating a directory dir
8. cat > file Places the standard input into the file
9. more file Output the contents of the file
10. head file Output the first 10 lines of the file
11. tail file Output the last 10 lines of the file
12. tail -f file Output the contents of file as it grows, starting with the last 10 lines
13. touch file Create or update file
14. rm file Deleting the file
15. rm -r dir Deleting the directory
16. rm -f file Force to remove the file
17. rm -rf dir Force to remove the directory dir

18. cp file1 file2 Copy the contents of file1 to file2
19. cp -r dir1 dir2 Copy dir1 to dir2;create dir2 if not present
20. mv file1 file2 Rename or move file1 to file2,if file2 is an existing directory
21. ln -s file link Create symbolic link link to file

Process management

1. ps To display the currently working processes
2. top Display all running process
3. kill pid Kill the process with given pid
4. killall proc Kill all the process named proc
5. pkill pattern Will kill all processes matching the pattern
6. bg List stopped or background jobs,resume a stopped job in the background
7. fg Brings the most recent job to foreground
8. fg n Brings job n to the foreground

File permission

1. chmod octal file Change the permission of file to octal,which can be found separately for user,group,world by adding,
 - 4-read(r)
 - 2-write(w)
 - 1-execute(x)

Searching

1. grep pattern file Search for pattern in file
2. grep -r pattern dir Search recursively for pattern in dir
3. command | grep pattern Search pattern in the output of a command
4. locate file Find all instances of file
5. find . -name filename Searches in the current directory (represented by a period) and below it,
for files and directories with names starting with filename

6. pgrep pattern Searches for all the named processes , that matches with the pattern and, by

default, returns their ID

System Info

1. date Show the current date and time
2. cal Show this month's calender
3. uptime Show current uptime
4. w Display who is on line
5. whoami Who you are logged in as
6. finger user Display information about user
7. uname -a Show kernel information
8. cat /proc/cpuinfo Cpu information
9. cat proc/meminfo Memory information
10. man command Show the manual for command
11. df Show the disk usage
12. du Show directory space usage
13. free Show memory and swap usage
14. whereis app Show possible locations of app
15. which app Show which applications will be run by default

Compression

1. tar cf file.tar file Create tar named file.tar containing file
2. tar xf file.tar Extract the files from file.tar
3. tar czf file.tar.gz files Create a tar with Gzip compression
4. tar xzf file.tar.gz Extract a tar using Gzip
5. tar cjf file.tar.bz2 Create tar with Bzip2 compression
6. tar xjf file.tar.bz2 Extract a tar using Bzip2
7. gzip file Compresses file and renames it to file.gz
8. gzip -d file.gz Decompresses file.gz back to file

Network

1. ping host Ping host and output results
2. whois domain Get whois information for domains
3. dig domain Get DNS information for domain
4. dig -x host Reverse lookup host
5. wget file Download file
6. wget -c file Continue a stopped download

Shortcuts

1. ctrl+c Halts the current command
2. ctrl+z Stops the current command, resume with fg in the foreground or bg in the background
3. ctrl+d Logout the current session, similar to exit
4. ctrl+w Erases one word in the current line
5. ctrl+u Erases the whole line
6. ctrl+r Type to bring up a recent command
7. !! Repeats the last command
8. exit Logout the current session

PROGRAM:

```
ubuntu@ubuntu:~/Desktop$ cd ..
```

```
ubuntu@ubuntu:~$ ls
```

```
compressed_jojo.tar  Documents  Music      Public  Videos
```

```
cp_jojo_gzip.tar.gz  Downloads  'Os Assignments'  snap
```

```
Desktop      Omkar  Pictures  Templates
```

```
ubuntu@ubuntu:~$ cd omkar
```

```
ubuntu@ubuntu:~/Omkar$ history
```

```
1 gedit Assignment-1
```

```
2 touch testfile
```

```
3 rm testfile
```

```
4 sudo mysql
```

```
5 ls
6 cd..
7 cd ..
8 ls
9 mkdir Omkar
10 cd Omkar/
11 pwd
12 man cat
13 cat < sample.txt
14 cat > sample.txt
15 cat sample.txt
16 cat < ubuntu_info
17 cat > ubuntu_info
18 cat sample.txt ubuntu_info
19 cat -n sample.txt
20 cat -n ubuntu_info
21 cat sample.txt > ubuntu_info
22 cat ubuntu_info
23 cat sample.txt
24 cat > ubuntu_info
25 cat ubuntu_info
26 cat sample.txt >> ubuntu_info
27 cat ubuntu_info
28 cat sample.txt ubuntu_info > merged_file
29 cat merged_file
30 cat *.txt
31 cat *
32 cat >> sample.txt
33 cat sample.txt
34 head merged_file
```

```
35 cat > ubuntu_info
36 head ubuntu_info
37 tail ubuntu_info
38 cat ubuntu_info | more
39 more
40 cat >> ubuntu_info
41 cat ubuntu_info
42 ls
43 ls -al
44 ls -lt
45 ls -l
46 ls -1
47 ls
48 ls -al
49 more ubuntu_info
50 touch ubuntu_info
51 touch sample.txt
52 rm sample.txt
53 ls
54 cd..
55 cd ..
56 ls
57 mkdir testdir
58 cd testdir/
59 rm -r dir
60 rm -r testdir
61 cd ..
62 rm -r testdir/
63 ls
64 ls -1
```

```
65 mkdir testdir
66 cd testdir/
67 touch newFile
68 ls
69 rm -f newFile
70 ls
71 ls -al
72 man r
73 man rm
74 cd ..
75 rm -rf testdir/
76 ls
77 cd Omkar/
78 touch CopiedFile
79 cp ubuntu_info CopiedFile
80 cat CopiedFile
81 cp -r Omkar copydir
82 cd ..
83 cp -r Omkar copydir
84 ls
85 cd copydir/
86 ls
87 cd ..
88 rm -r copydir/
89 ls
90 cd Omkar/
91 ls
92 mv ubuntu_info ubuntu_info1
93 ls
94 cd ..
```

```
95 mkdir newdir
96 ls
97 cd Omkar/
98 ls
99 mv ubuntu_info1 newdir
100 cd ..
101 cd newdir/
102 ls
103 cd ../Omkar/
104 ls
105 mkdir nwedir
106 mv newdir nwedir/
107 ls
108 cd nwedir/
109 ls
110 more newdir
111 ls
112 cd ..
113 ls
114 rm -r nwedir/
115 ls
116 ls -l
117 ln -s merged_file merged_file_link
118 ls
119 ls -l
120 rm merged_file_link
121 ls
122 ps
123 top
124 bg
```



```
125 fg
126 fg n
127 ls -l
128 chmod o+wx merged_file
129 ls -l
130 chmod o-wx merged_file
131 ls -l
132 chmod o+21 merged_file
133 ls -l
134 chmod 21 merged_file
135 ls -l
136 ls -l
137 chmod 42 merged_file
138 ls -l
139 chmod u+rw g+rw o+r merged_file
140 chmod u+rw merged_file
141 ls -l
142 chmod g+rw merged_file
143 chmod o+rw merged_file
144 ls -l
145 chmod o+r merged_file
146 ls -l
147 chmod o-w merged_file
148 ls -l
149 cat > fruits.txt
150 cat fruits.txt
151 cat -n fruits.txt
152 grep "fruit" fruits.txt
153 grep "berries" fruits.txt
154 grep -i "berries" fruits.txt
```

```
155 grep -v "berries" fruits.txt
156 grep -n "berries" fruits.txt
157 grep "fruit" fruits.txt
158 grep -w "fruit" fruits.txt
159 grep -c "fruit" fruits.txt
160 mkdir fruits&vegetables
161 mkdir fruits_vegetables
162 cd fruits_vegetables/
163 cat > fruits.txt
164 cat > more_fruits.txt
165 cat > vegetables.txt
166 cd ..
167 grep -r "fruit" fruits_vegetables/
168 cd fruits_vegetables/
169 grep -l "fruit" *
170 grep -L "fruit" *
171 grep "fruit" *
172 grep "fruit" fruits.txt
173 grep "fruit" fruits.txt | grep "oranges"
174 grep "fruit" fruits.txt | grep "berries"
175 locate fruits.txt
176 locate .txt
177 locate merged_file.txt
178 cd ..
179 ls
180 locate more-fruits.txt
181 locate fruits.txt
182 file .-fruits.txt
183 find .-fruits.txt
184 find .-name fruits.txt
```

185 find . -name fruits.txt

186 locate file fruits.txt

187 pgrep

188 pgrep "bash"

189 pgrep "fruits"

190 pgrep "fruit"

191 pgrep "sys"

192 ps

193 top

194 date

195 cal

196 uptime

197 w

198 whoami

199 finger user

200 finger ubuntu

201 uname -a

202 cat /proc/cpuinfo

203 cat /proc/cpuinfo

204 cat /proc/meminfo

205 cat /proc/meminfo

206 cat -lh /proc/meminfo

207 df

208 du

209 free

210 du -h

211 whereis fruits

212 whereis firefox

213 which app

214 which firefox

```
215 ping google
216 ping google.com
217 ping host
218 ping google.com
219 ls -l
220 cd ..
221 ls -l
222 tar cf compressed_jojo.tar Omkar/
223 ls -l
224 tar xf compressed_jojo.tar
225 ls -l
226 tar czf cp_jojo_gzip.tar.gz Omkar/
227 ls -l
228 tar xzf cp_jojo_gzip.tar.gz
229 ls -l
230 gzip Omkar/
231 cd Omkar/
232 gzip fruits
233 gzip merged_file
234 ls -l
235 whois
236 dig domain
237 exit
238 cd ..
239 ls
240 cd Omkar
241 history
```

OUTPUT:

```
ubuntu@ubuntu:~$ ls
```

Desktop Documents Downloads Music Pictures Public snap Templates Videos

```
ubuntu@ubuntu:~$ mkdir Omkar
```

```
ubuntu@ubuntu:~$ cd Omkar/
```

```
ubuntu@ubuntu:~/Omkar$ pwd
```

```
/home/ubuntu/Omkar
```

```
ubuntu@ubuntu:~/Omkar$ man cat
```

```
ubuntu@ubuntu:~/Omkar$ cat < sample.txt
```

```
bash: sample.txt: No such file or directory
```

```
ubuntu@ubuntu:~/Omkar$ cat > sample.txt
```

```
This is a sample text file
```

```
This is a new line in the sample text file.ubuntu@ubuntu:~/Omkar$ cat sample.txt
```

```
This is a sample text file
```

```
This is a new line in the sample text file.ubuntu@ubuntu:
```

```
:~/Omkar$ cat >> sample.txt
```

```
This is newly added text
```

```
ubuntu@ubuntu:~/Omkar$ cat sample.txt
```

```
This is a sample text file
```

```
This is a new line in the sample text file.This is newly added text
```

```
ubuntu@ubuntu:~/Omkar$ ls -al
```

```
total 12
```

```
drwxrwxr-x 2 ubuntu ubuntu 100 Mar 12 05:05 .
```

```
drwxr-x--- 15 ubuntu ubuntu 400 Mar 12 04:44 ..
```

```
-rw-rw-r-- 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
```

```
-rw-rw-r-- 1 ubuntu ubuntu 95 Mar 12 05:07 sample.txt
```

```
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 05:25 ubuntu_info
```

```
ubuntu@ubuntu:~/Omkar$ ls -lt
```

```
total 12
```

```
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 05:25 ubuntu_info
```

```
-rw-rw-r-- 1 ubuntu ubuntu 95 Mar 12 05:07 sample.txt
```

```
-rw-rw-r-- 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
```

```
ubuntu@ubuntu:~/Omkar$ ls -l
total 12
-rw-rw-r-- 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
-rw-rw-r-- 1 ubuntu ubuntu 95 Mar 12 05:07 sample.txt
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 05:25 ubuntu_info
```

```
ubuntu@ubuntu:~/Omkar$ ls -l
```

```
merged_file
```

```
sample.txt
```

```
ubuntu_info
```

```
ubuntu@ubuntu:~/Omkar$ ls
```

```
merged_file sample.txt ubuntu_info
```

```
ubuntu@ubuntu:~/Omkar$ ls -al
```

```
total 12
```

```
drwxrwxr-x 2 ubuntu ubuntu 100 Mar 12 05:05 .
```

```
drwxr-x--- 15 ubuntu ubuntu 400 Mar 12 04:44 ..
```

```
-rw-rw-r-- 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
```

```
-rw-rw-r-- 1 ubuntu ubuntu 95 Mar 12 05:07 sample.txt
```

```
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 05:25 ubuntu_info
```

```
ubuntu@ubuntu:~/Omkar$ ls
```

```
CopiedFile merged_file
```

```
ubuntu@ubuntu:~/Omkar$ ps
```

```
PID TTY      TIME CMD
```

```
5914 pts/0    00:00:00 bash
```

```
17089 pts/0    00:00:00 ps
```

```
ubuntu@ubuntu:~/Omkar$ ps
```

```
PID TTY      TIME CMD
```

```
5914 pts/0    00:00:00 bash
```

```
17794 pts/0    00:00:00 ps
```

```
ubuntu@ubuntu:~/Omkar$ top
```

top - 06:33:37 up 2:03, 1 user, load average: 0.31, 0.49, 0.46

Tasks: 239 total, 1 running, 238 sleeping, 0 stopped, 0 zombie

%Cpu(s): 6.7 us, 1.6 sy, 0.0 ni, 91.5 id, 0.2 wa, 0.0 hi, 0.1 si, 0.0 st

MiB Mem : 3813.9 total, 563.0 free, 1502.7 used, 1748.2 buff/cache

MiB Swap: 0.0 total, 0.0 free, 0.0 used. 1089.7 avail Mem

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
5103	ubuntu	20	0	2132368	149696	98636	S	9.3	3.8	4:04.09	Xorg
12614	ubuntu	20	0	2402660	277392	126860	S	8.3	7.1	0:49.59	soffice+
5278	ubuntu	20	0	4882540	161720	25144	S	6.6	4.1	3:43.82	gnome-s+
5894	ubuntu	20	0	830864	35388	17540	S	3.7	0.9	0:34.67	gnome-t+
6017	ubuntu	20	0	4044364	440848	130476	S	2.7	11.3	19:35.66	firefox
17039	ubuntu	20	0	2556196	171516	99228	S	2.0	4.4	0:12.03	Isolate+
17795	ubuntu	20	0	21864	3900	3296	R	0.7	0.1	0:00.13	top
26	root	20	0	0	0	0	S	0.3	0.0	0:03.95	ksoftir+
161	root	0	-20	0	0	0	I	0.3	0.0	0:00.78	kworker+
1688	root	20	0	137620	832	0	S	0.3	0.0	0:01.15	thermald
5547	ubuntu	20	0	884700	20052	1988	S	0.3	0.5	0:02.89	xdg-des+
6281	ubuntu	20	0	2457560	82208	49000	S	0.3	2.1	0:09.40	Privile+
1	root	20	0	166720	7516	3688	S	0.0	0.2	0:02.15	systemd
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_gp
4	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	rcu_par+
6	root	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker+

ubuntu@ubuntu:~/Omkar\$ bg

bash: bg: current: no such job

ubuntu@ubuntu:~/Omkar\$ fg

bash: fg: current: no such job

ubuntu@ubuntu:~/Omkar\$ fg n

bash: fg: n: no such job

```
ubuntu@ubuntu:~/Omkar$ ls -l
total 8
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 06:08 CopiedFile
-rw-rw-r-- 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
ubuntu@ubuntu:~/Omkar$ chmod o+wx merged_file
ubuntu@ubuntu:~/Omkar$ ls -l
total 8
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 06:08 CopiedFile
-rw-rw-rwx 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
ubuntu@ubuntu:~/Omkar$ chmod o-wx merged_file
ubuntu@ubuntu:~/Omkar$ ls -l
total 8
-rw-rw-r-- 1 ubuntu ubuntu 1668 Mar 12 06:08 CopiedFile
-rw-rw-r-- 1 ubuntu ubuntu 434 Mar 12 05:05 merged_file
```

CONCLUSION: Hence we studied the basic linux commands.