# Green University of Bangladesh
# Department of Computer Science and Engineering (CSE)

**Faculty of Sciences and Engineering**
**Semester: (Fall, Year: 2025), B.Sc. in CSE (Day)**

**LAB REPORT NO: 01**
**Course Title: Operating System Lab**
**Course Code: CSE-402 Section: 231-D2**

**Lab Experiment Name: Linux/Unix Commands for Beginners & Linux/Unix Commands-II**

**Student Details**

| | Name | ID |
|---|---|---|
| 1. | Promod Chandra Das | 231002005 |

**Lab Date : 7.10.2025**

**Submission Date: 23.10.2025**

**Course Teacher's Name : Md. Shoab Alam**

**[For Teachers use only: Don't Write Anything inside this box]**

**Lab Report Status**

**Marks: ……** **Signature: .....**
**Comments: .....** **Date: .....**

## 1. TITLE OF THE LAB EXPERIMENT

**Linux/Unix Commands for Beginners & Linux/Unix Commands- II**

## 2. OBJECTIVES :

The primary objective of this laboratory exercise is to gain practical knowledge and hands-on experience with the fundamental and intermediate commands within the Linux/Unix Command Line Interface (CLI).

**The specific learning goals include:**

- File and Directory Management: Understanding how to create, remove, rename, copy, and move files and directories.
- Text Editing: Gaining familiarity with command-line text editors, such as the Vi Text Editor.
- Pattern Matching: Mastering the use of Wildcards (or globbing) and powerful Regular Expressions for referring to multiple files and analyzing data.
- Permissions and Security: Learning to identify and modify file and directory permissions to control read, write, and execute access.
- Data Transformation (Filters): Utilizing various filter commands (like head, tail, sort, cut, and sed) to accept textual data and transform it in useful ways.
- Command Chaining: Implementing Piping and Redirection to join commands and manage data streams (STDIN, STDOUT, STDERR) for complex tasks.
- Process Management: Employing commands such as top and ps to monitor the system's state and manage running processes.

## 3. PROCEDURE :

The implementation focused on demonstrating core Linux command-line capabilities derived from the lab objectives.

**The procedure covered several key categories:**

1. Basic File Management: Utilized commands like ls, cd, mkdir, rm, cp, and mv for navigating the filesystem and manipulating files and directories.
2. Permissions: Employed chmod (both symbolic and numeric modes) to set read, write, and execute permissions.
3. Data Filtering and Editing: Applied filters such as head, tail, wc, sort, and cut for data transformation. Text replacement was performed using sed.
4. Pattern Matching: Used grep and egrep with Regular Expressions for advanced searching and filtering of

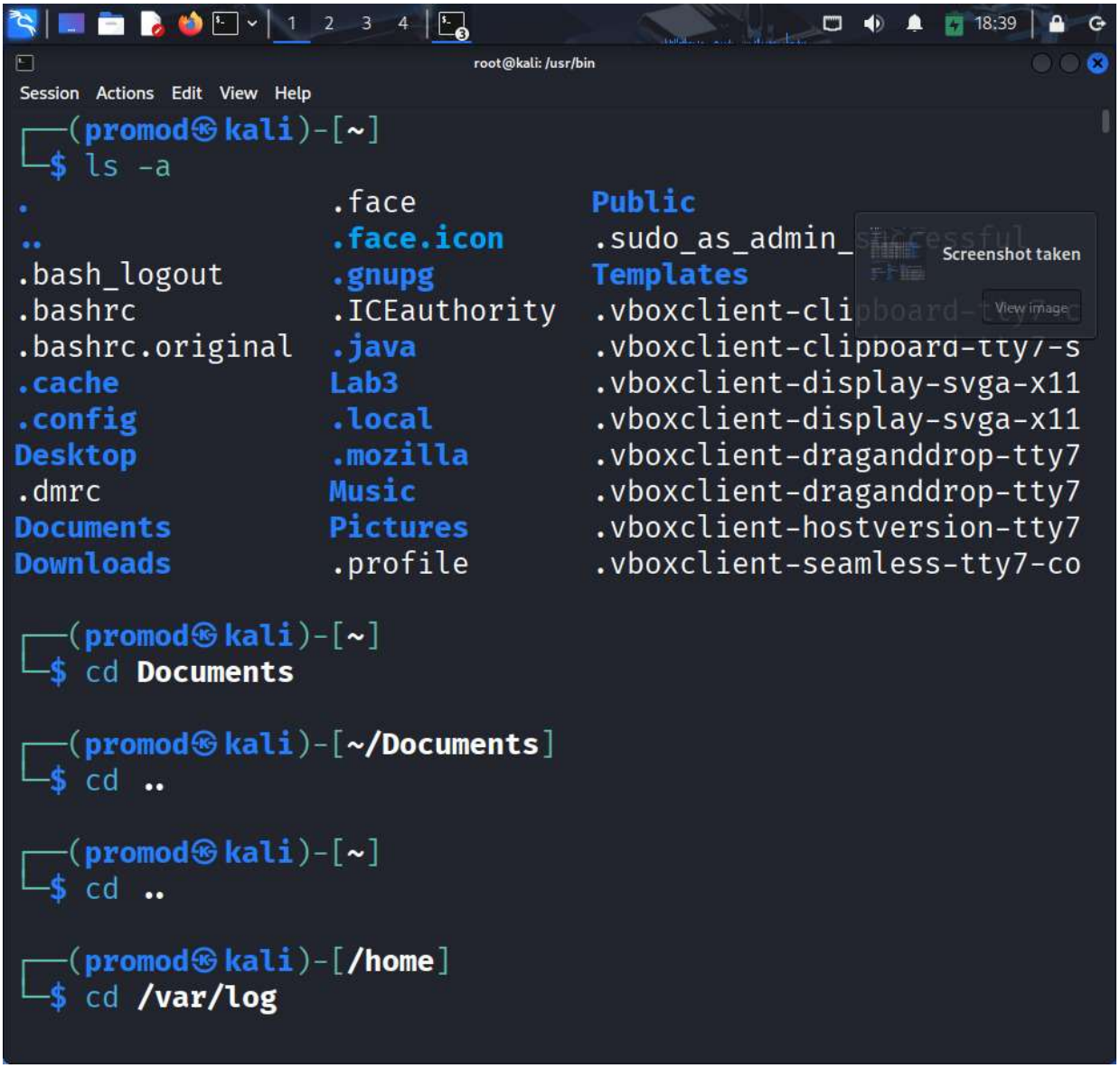
content.

5. Piping and Redirection: Combined multiple commands using the pipe (|) and redirected output using > and >>.

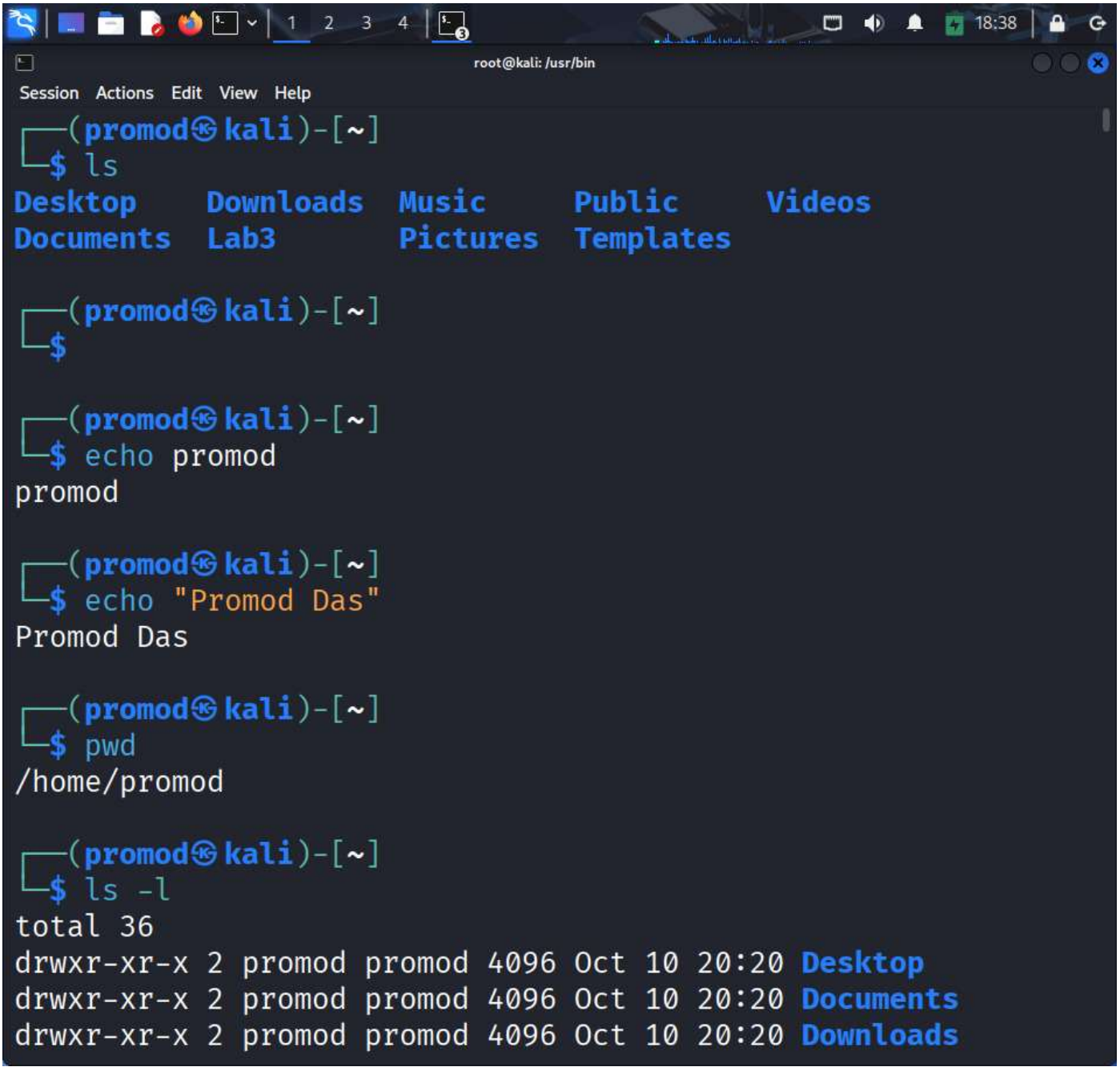
6. Process Control: Monitored system state and running programs with ps and top, and managed processes using kill.

## 4.IMPLEMENTATION :

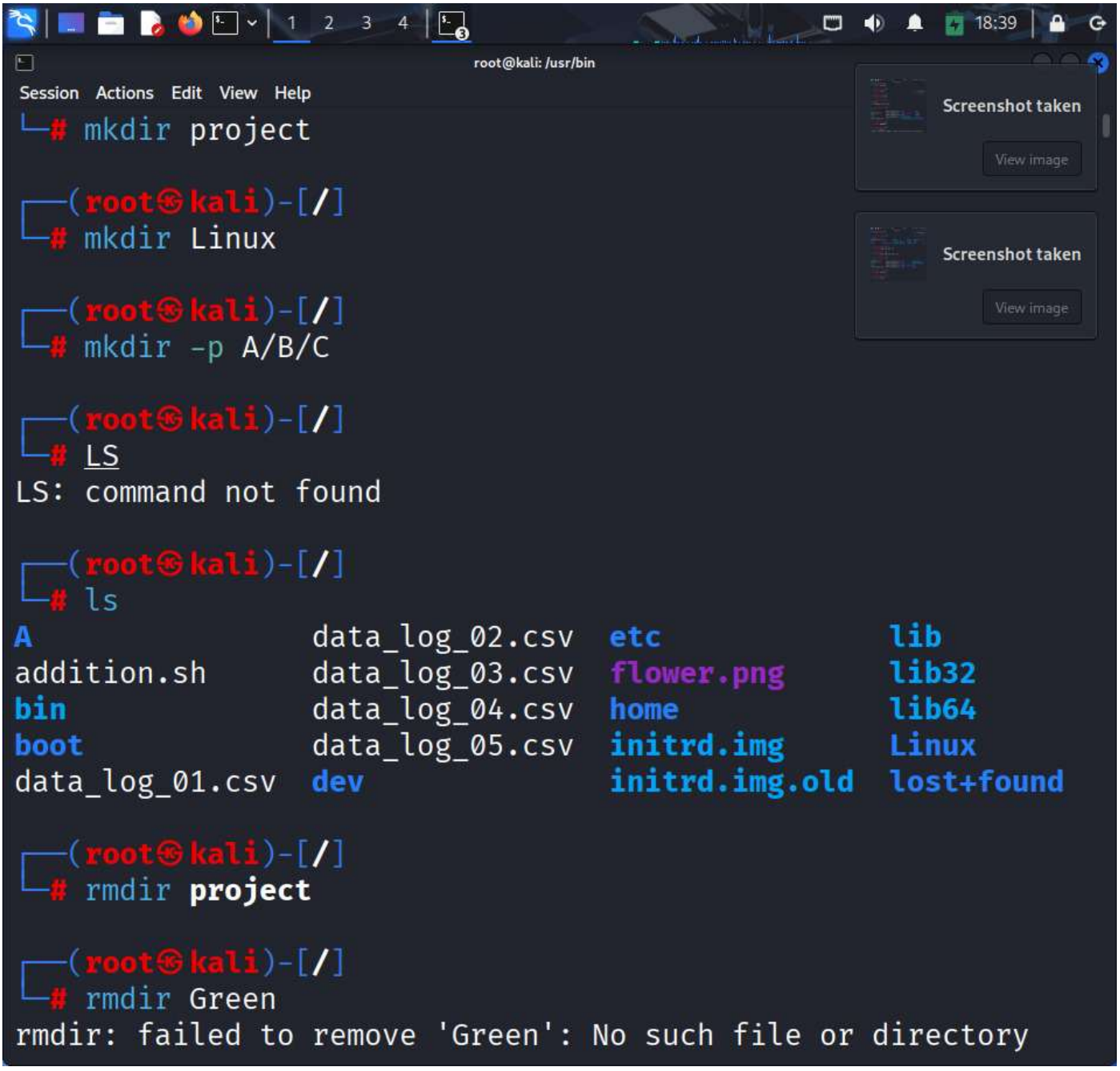
**Basic Operations, File/Directory Manipulation, and Permissions ,Filters, Grep, and Regular Expressions Process Management and Advanced Combinations:**



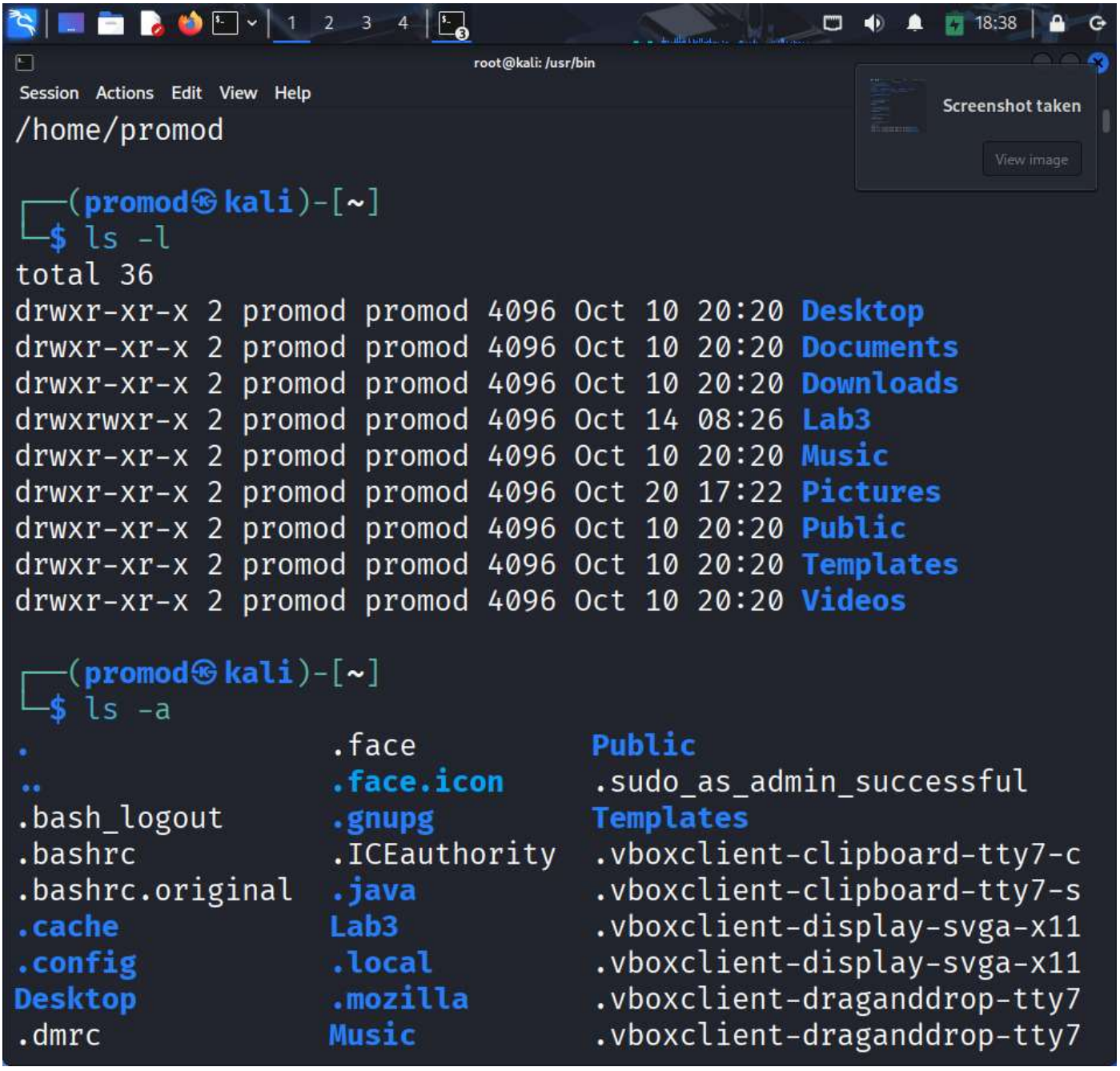

**Fiqure-01**


1 2 3 4
18:38
root@kali: /usr/bin
Session Actions Edit View Help
┌──(promod㉿kali)-[~]
└─$ ls
Desktop Downloads Music Public Videos
Documents Lab3 Pictures Templates
┌──(promod㉿kali)-[~]
└─$
┌──(promod㉿kali)-[~]
└─$ echo promod
promod
┌──(promod㉿kali)-[~]
└─$ echo "Promod Das"
Promod Das
┌──(promod㉿kali)-[~]
└─$ pwd
/home/promod
┌──(promod㉿kali)-[~]
└─$ ls -l
total 36
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Desktop
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Documents
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Downloads

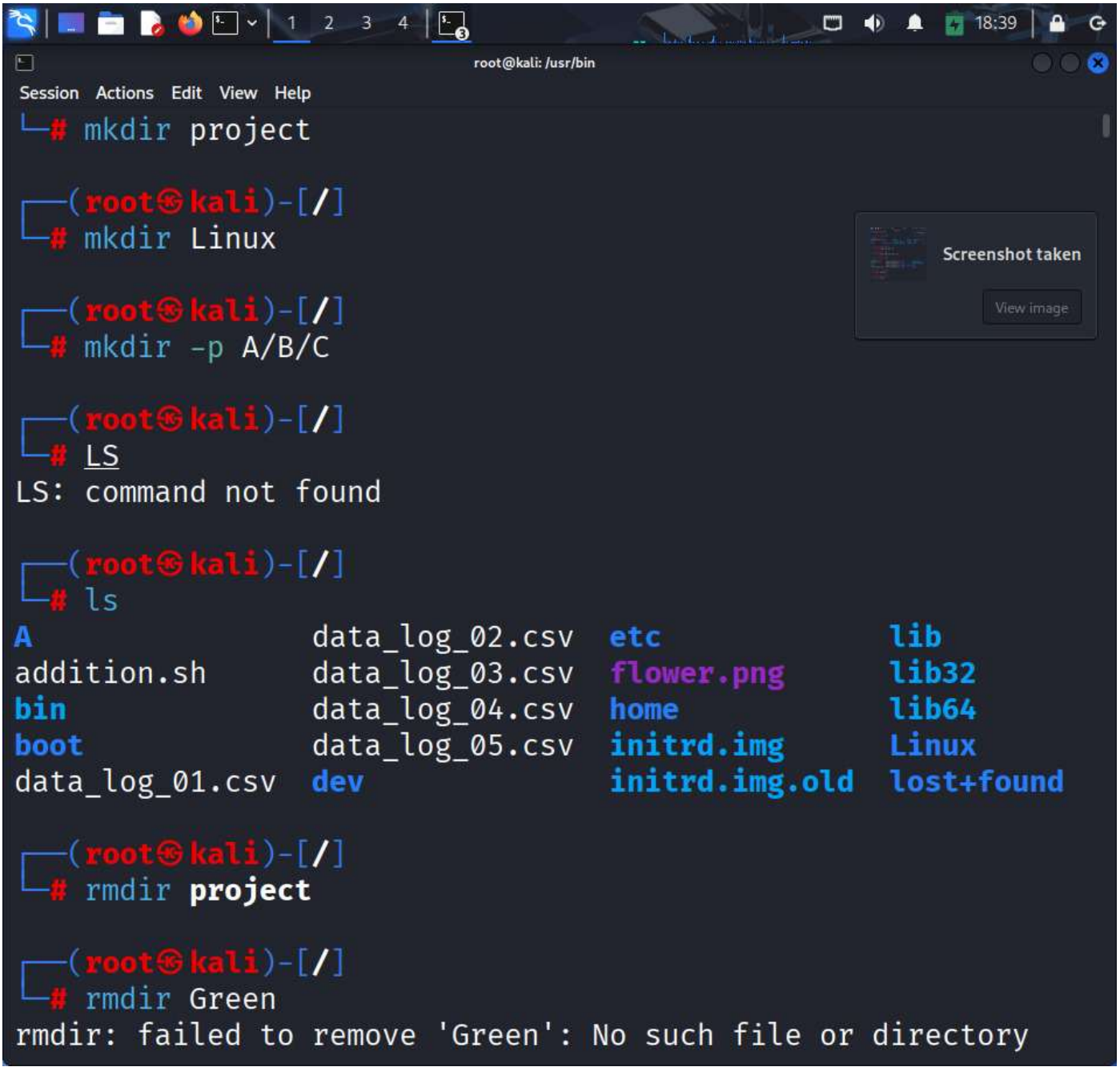
**Fiqure-02**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
# mkdir project
(root㉿kali)-[/]
# mkdir Linux
(root㉿kali)-[/]
# mkdir -p A/B/C
(root㉿kali)-[/]
# LS
LS: command not found
(root㉿kali)-[/]
# ls
A data_log_02.csv etc lib
addition.sh data_log_03.csv flower.png lib32
bin data_log_04.csv home lib64
boot data_log_05.csv initrd.img Linux
data_log_01.csv dev initrd.img.old lost+found
(root㉿kali)-[/]
# rmdir project
(root㉿kali)-[/]
# rmdir Green
rmdir: failed to remove 'Green': No such file or directory
Screenshot taken
View image
Screenshot taken
View image

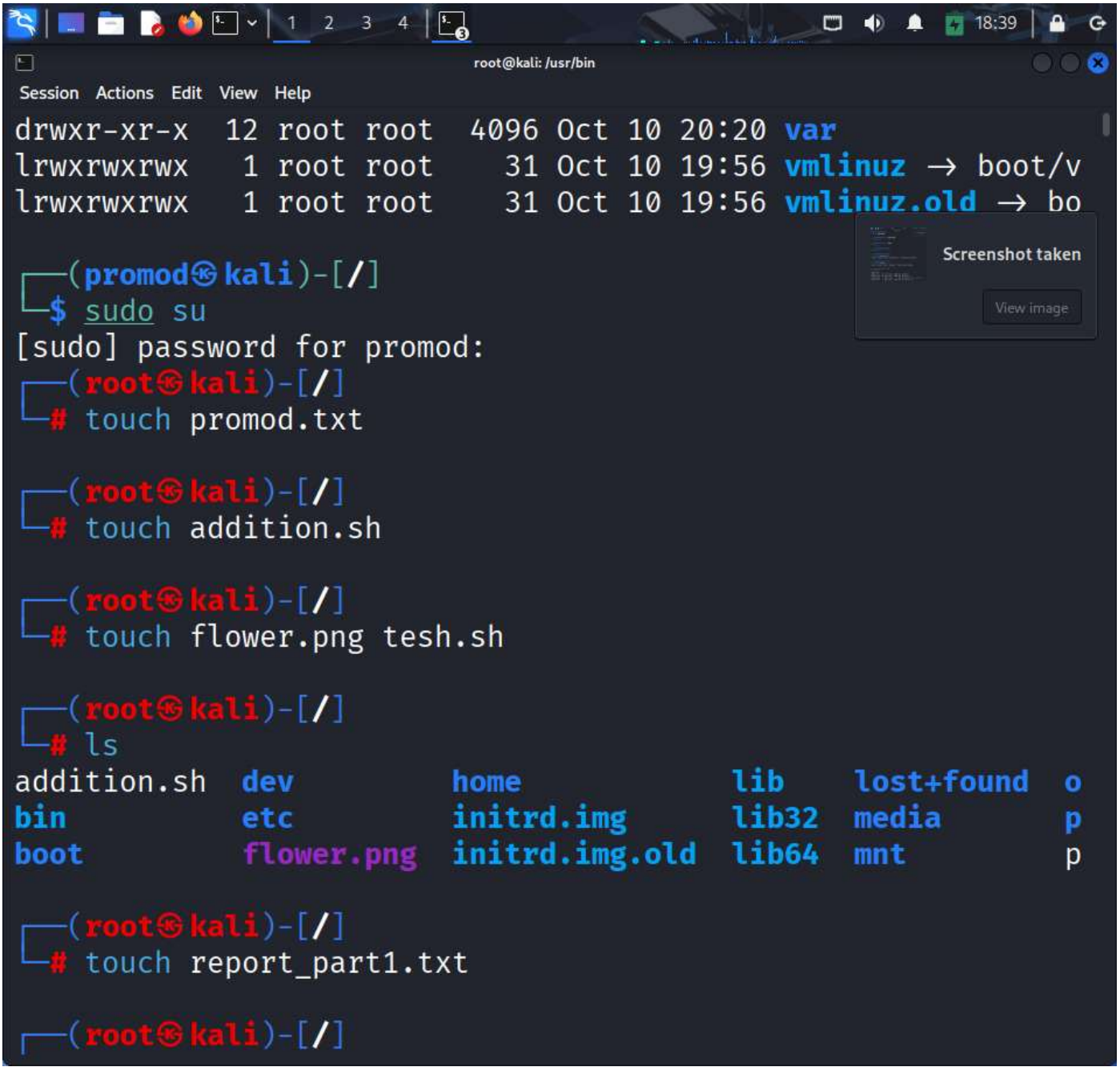
**Fiqure-03**


1 2 3 4
18:38
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
/home/promod
┌──(promod㉿kali)-[~]
└─$ ls -l
total 36
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Desktop
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Documents
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Downloads
drwxrwxr-x 2 promod promod 4096 Oct 14 08:26 Lab3
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Music
drwxr-xr-x 2 promod promod 4096 Oct 20 17:22 Pictures
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Public
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Templates
drwxr-xr-x 2 promod promod 4096 Oct 10 20:20 Videos
┌──(promod㉿kali)-[~]
└─$ ls -a
. .face Public
.. .face.icon .sudo_as_admin_successful
.bash_logout .gnupg Templates
.bashrc .ICEauthority .vboxclient-clipboard-tty7-c
.bashrc.original .java .vboxclient-clipboard-tty7-s
.cache Lab3 .vboxclient-display-svga-x11
.config .local .vboxclient-display-svga-x11
Desktop .mozilla .vboxclient-draganddrop-tty7
.dmrc Music .vboxclient-draganddrop-tty7

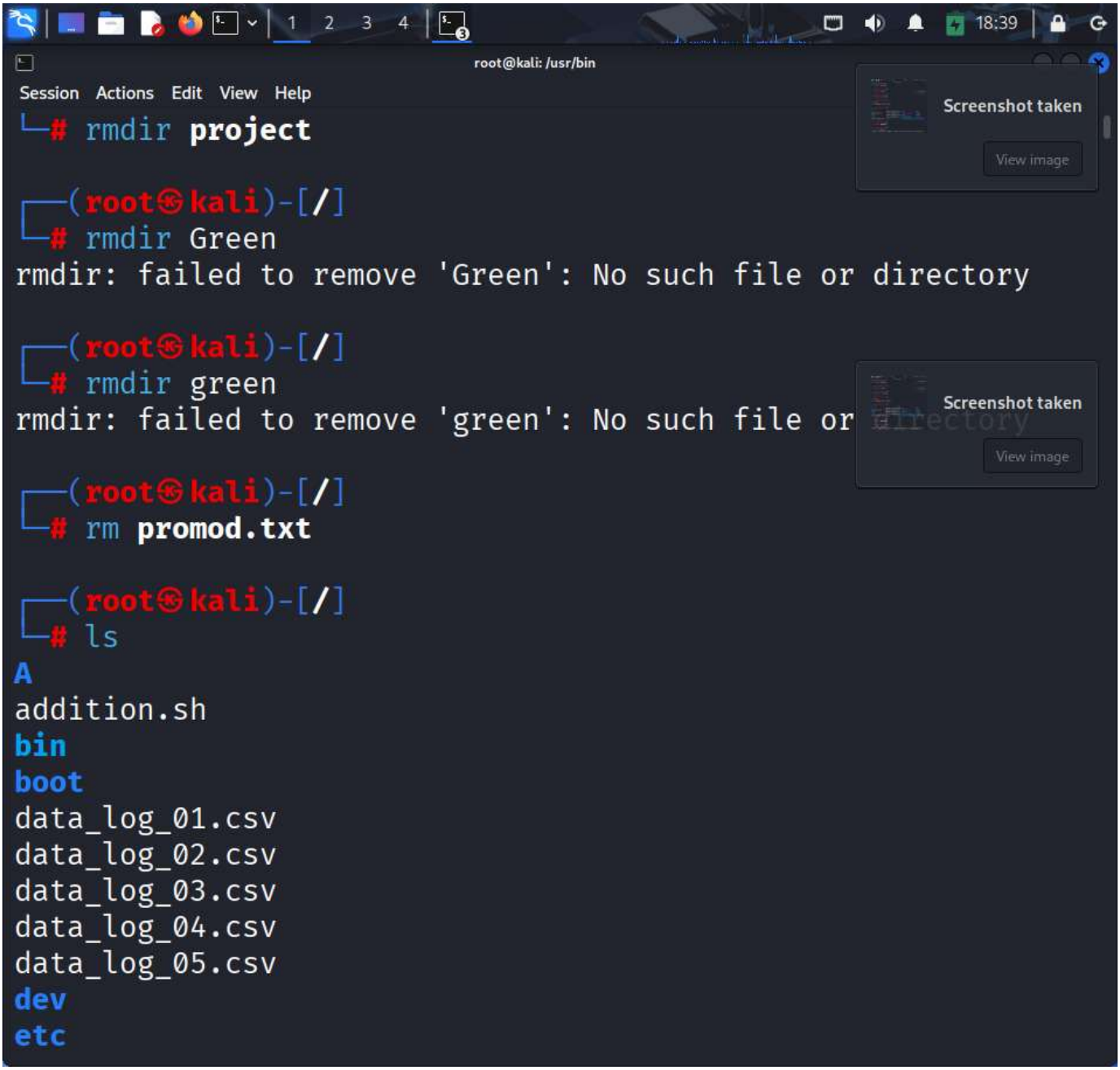
**Fiqure-04**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
└─# mkdir project
┌──(root㉿kali)-[/]
└─# mkdir Linux
┌──(root㉿kali)-[/]
└─# mkdir -p A/B/C
┌──(root㉿kali)-[/]
└─# LS
LS: command not found
┌──(root㉿kali)-[/]
└─# ls
A data_log_02.csv etc lib
addition.sh data_log_03.csv flower.png lib32
bin data_log_04.csv home lib64
boot data_log_05.csv initrd.img Linux
data_log_01.csv dev initrd.img.old lost+found
┌──(root㉿kali)-[/]
└─# rmdir project
┌──(root㉿kali)-[/]
└─# rmdir Green
rmdir: failed to remove 'Green': No such file or directory
Screenshot taken
View image

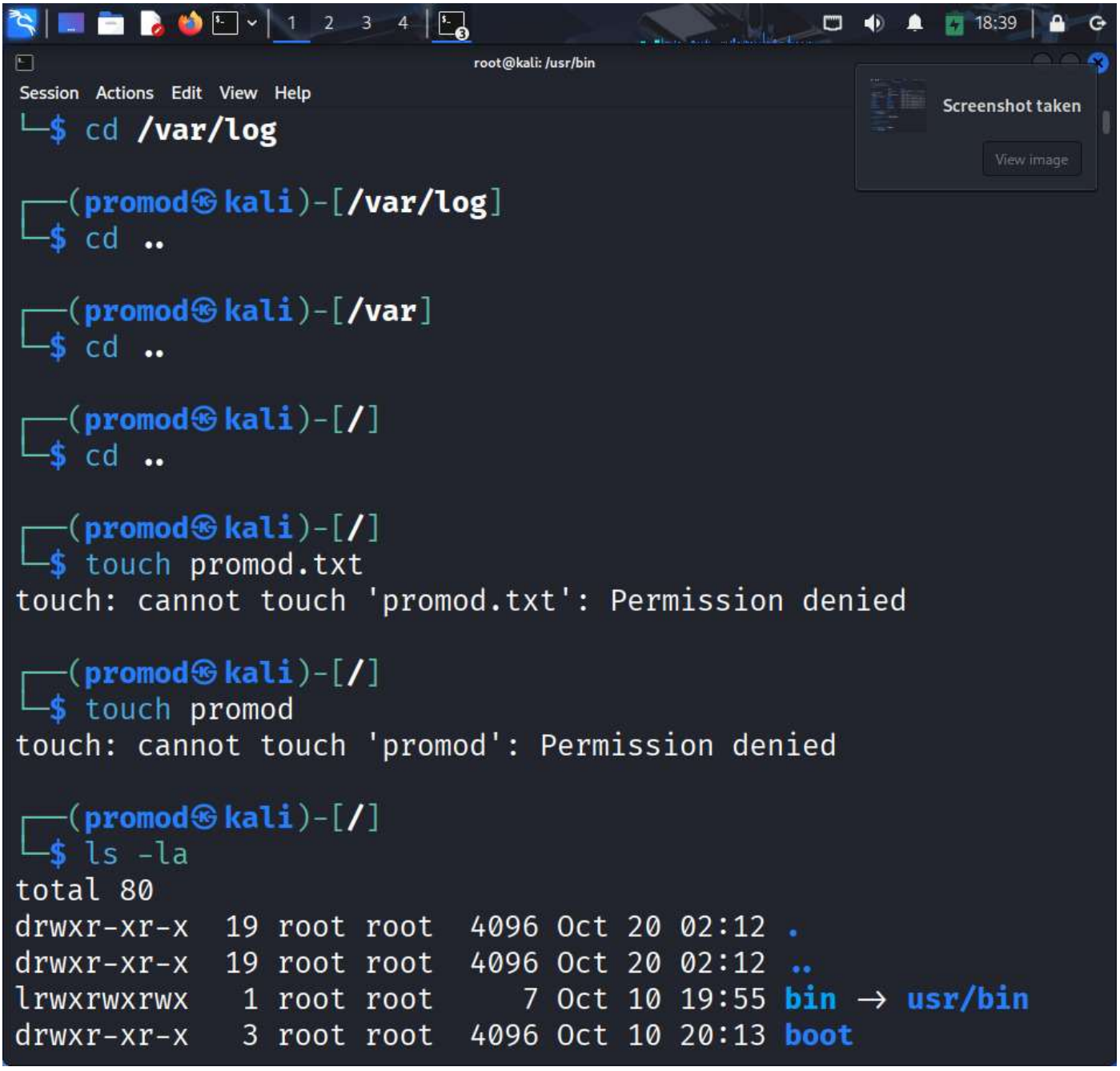
**Fiqure-05**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
drwxr-xr-x 12 root root 4096 Oct 10 20:20 var
lrwxrwxrwx 1 root root 31 Oct 10 19:56 vmlinuz → boot/v
lrwxrwxrwx 1 root root 31 Oct 10 19:56 vmlinuz.old → bo
Screenshot taken
View image
┌──(promod㉿kali)-[/]
└─$ sudo su
[sudo] password for promod:
┌──(root㉿kali)-[/]
└─# touch promod.txt
┌──(root㉿kali)-[/]
└─# touch addition.sh
┌──(root㉿kali)-[/]
└─# touch flower.png tesh.sh
┌──(root㉿kali)-[/]
└─# ls
addition.sh dev home lib lost+found o
bin etc initrd.img lib32 media p
boot flower.png initrd.img.old lib64 mnt p
┌──(root㉿kali)-[/]
└─# touch report_part1.txt
┌──(root㉿kali)-[/]

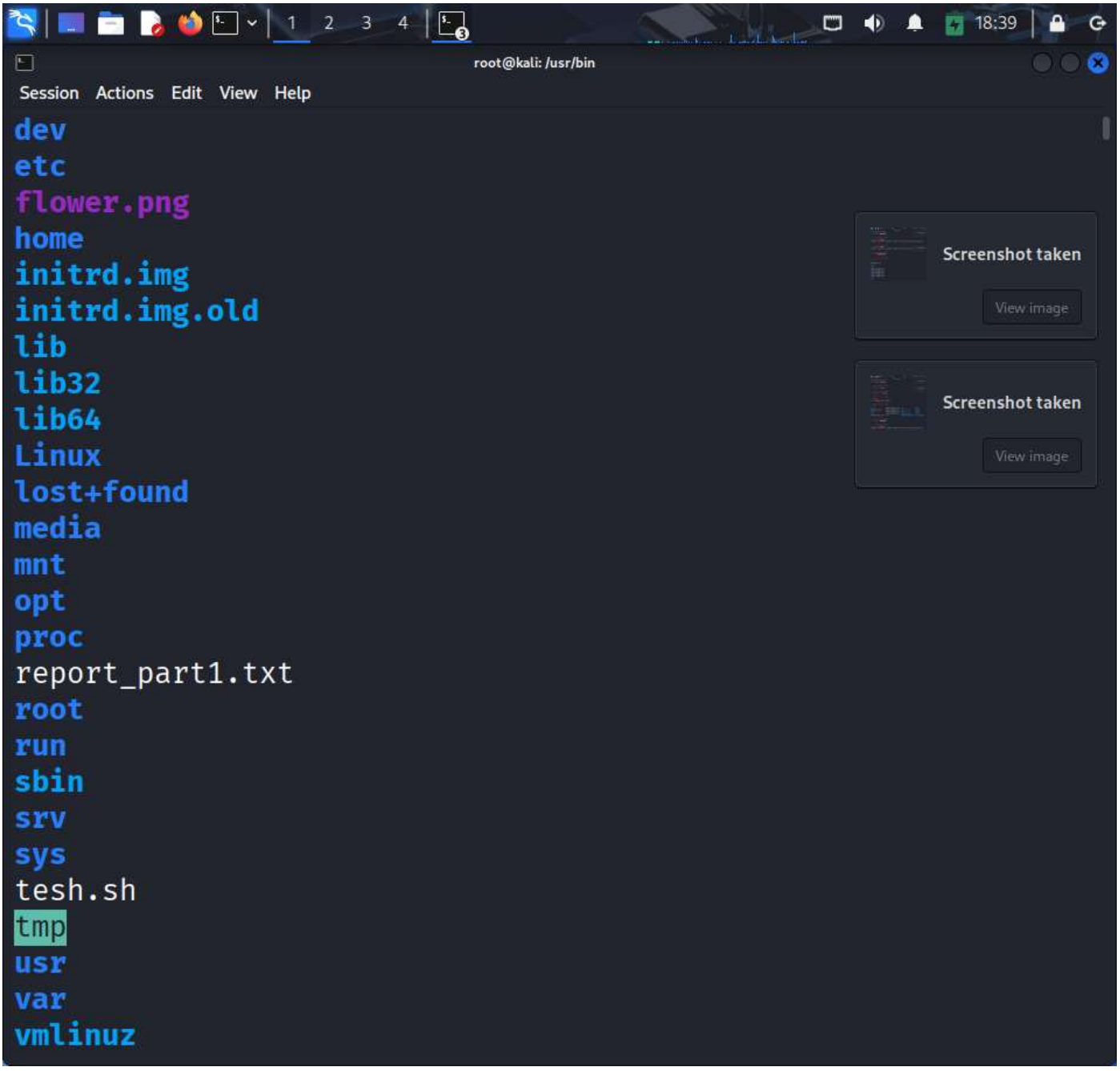
**Fiqure-06**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
└─# rmdir project
┌──(root㉿kali)-[/]
└─# rmdir Green
rmdir: failed to remove 'Green': No such file or directory
┌──(root㉿kali)-[/]
└─# rmdir green
rmdir: failed to remove 'green': No such file or directory
┌──(root㉿kali)-[/]
└─# rm promod.txt
┌──(root㉿kali)-[/]
└─# ls
A
addition.sh
bin
boot
data_log_01.csv
data_log_02.csv
data_log_03.csv
data_log_04.csv
data_log_05.csv
dev
etc
Screenshot taken
View image
Screenshot taken
View image

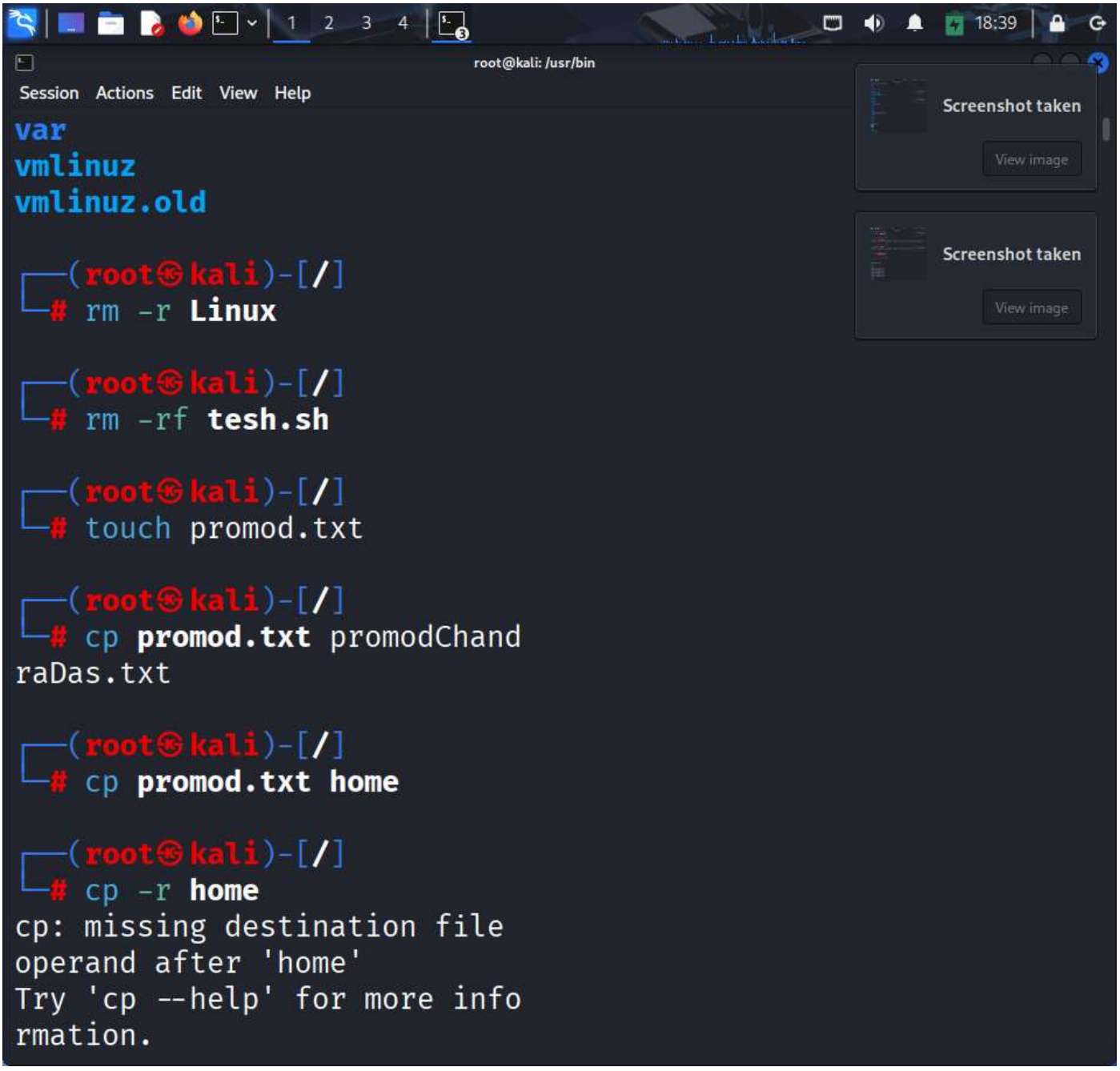
**Fiqure-07**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
└─$ cd /var/log
┌──(promod㉿kali)-[/var/log]
└─$ cd ..
┌──(promod㉿kali)-[/var]
└─$ cd ..
┌──(promod㉿kali)-[/]
└─$ cd ..
┌──(promod㉿kali)-[/]
└─$ touch promod.txt
touch: cannot touch 'promod.txt': Permission denied
┌──(promod㉿kali)-[/]
└─$ touch promod
touch: cannot touch 'promod': Permission denied
┌──(promod㉿kali)-[/]
└─$ ls -la
total 80
drwxr-xr-x 19 root root 4096 Oct 20 02:12 .
drwxr-xr-x 19 root root 4096 Oct 20 02:12 ..
lrwxrwxrwx 1 root root 7 Oct 10 19:55 bin → usr/bin
drwxr-xr-x 3 root root 4096 Oct 10 20:13 boot

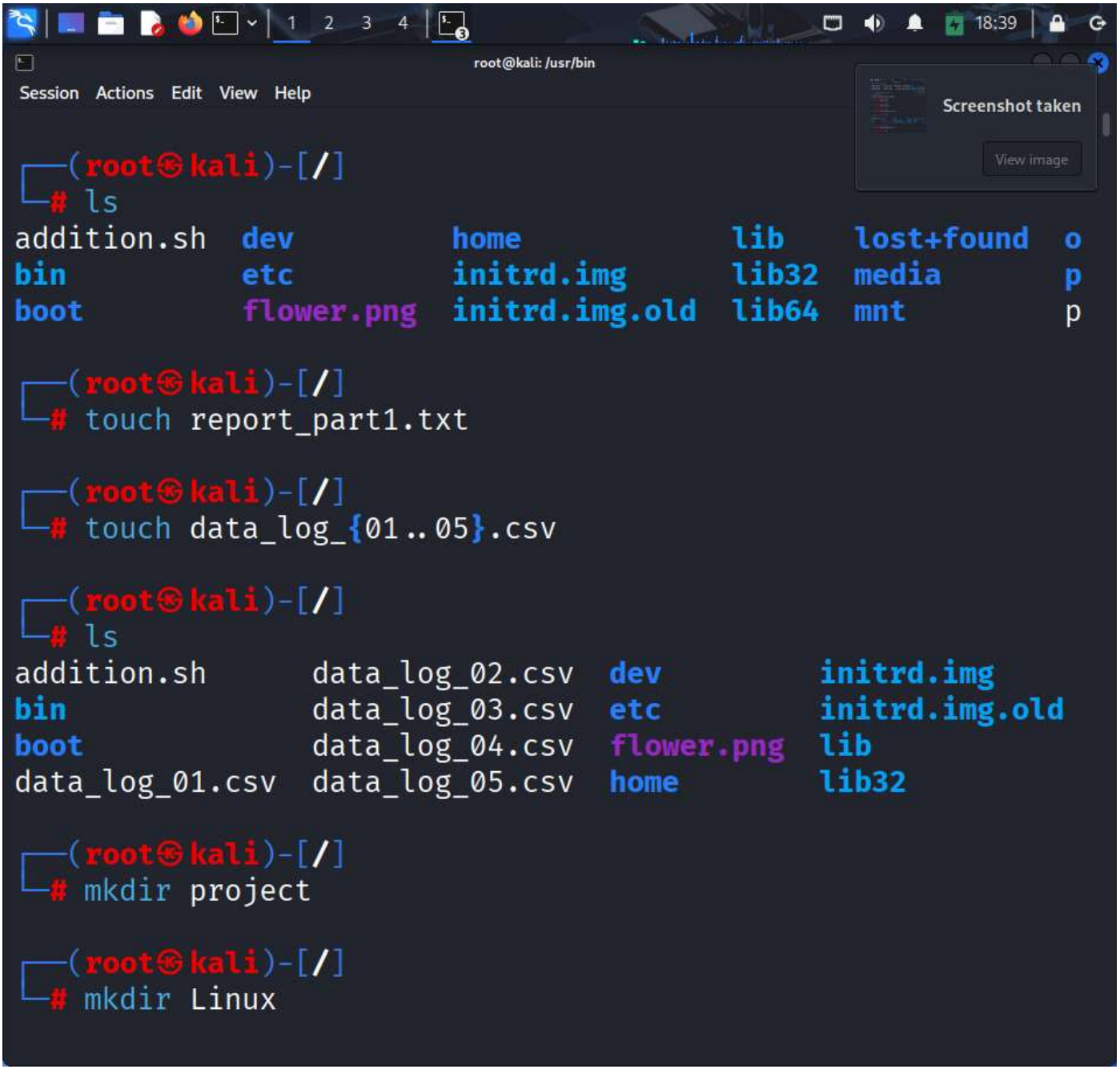
**Fiqure-08**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
dev
etc
flower.png
home
initrd.img
initrd.img.old
lib
lib32
lib64
Linux
lost+found
media
mnt
opt
proc
report_part1.txt
root
run
sbin
srv
sys
tesh.sh
tmp
usr
var
vmlinuz
Screenshot taken
View image
Screenshot taken
View image

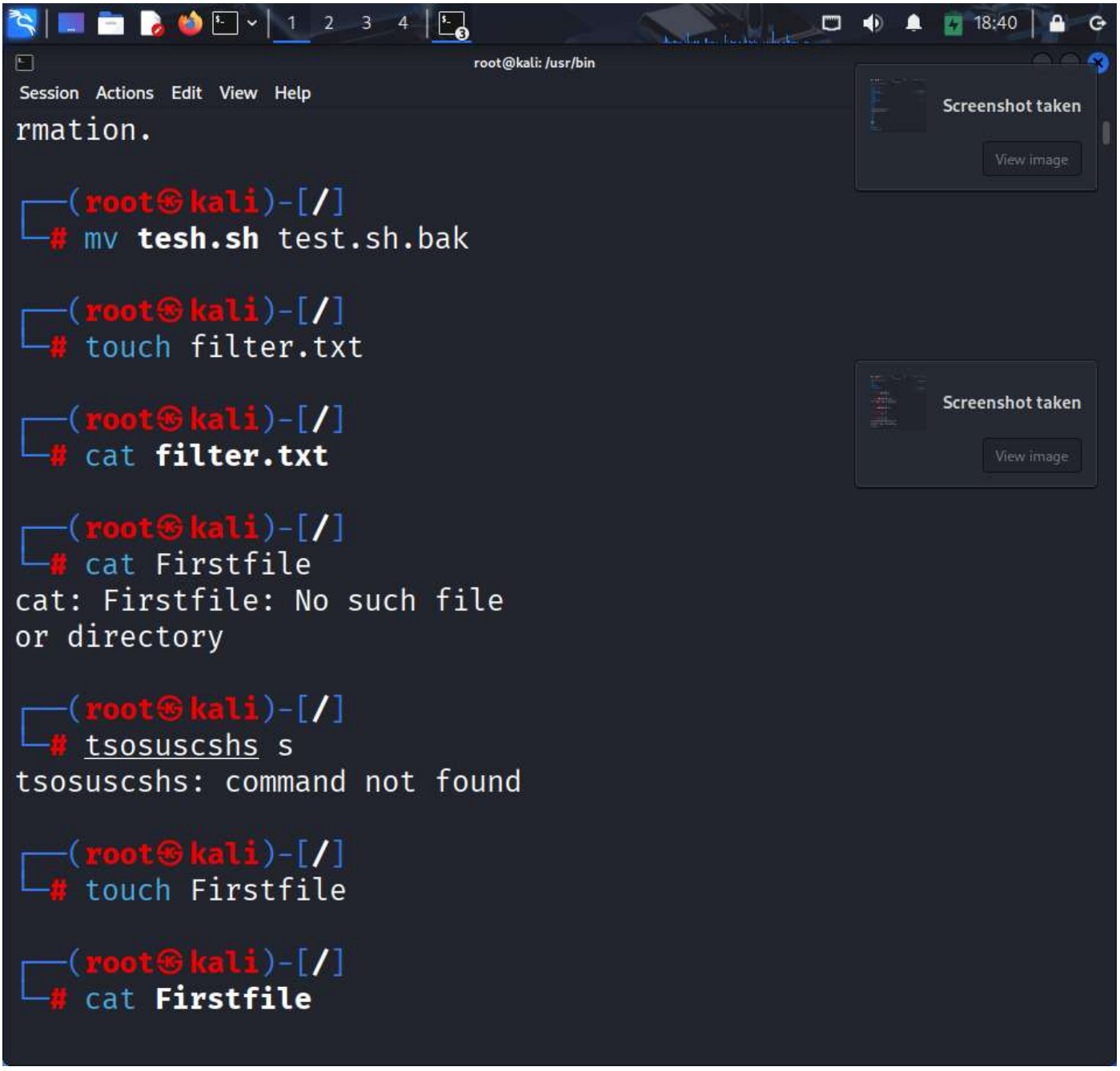
**Fiqure-09**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
var
vmlinuz
vmlinuz.old
(root㉿kali)-[/]
# rm -r Linux
(root㉿kali)-[/]
# rm -rf tesh.sh
(root㉿kali)-[/]
# touch promod.txt
(root㉿kali)-[/]
# cp promod.txt promodChand
raDas.txt
(root㉿kali)-[/]
# cp promod.txt home
(root㉿kali)-[/]
# cp -r home
cp: missing destination file
operand after 'home'
Try 'cp --help' for more info
rmation.
Screenshot taken
View image
Screenshot taken
View image

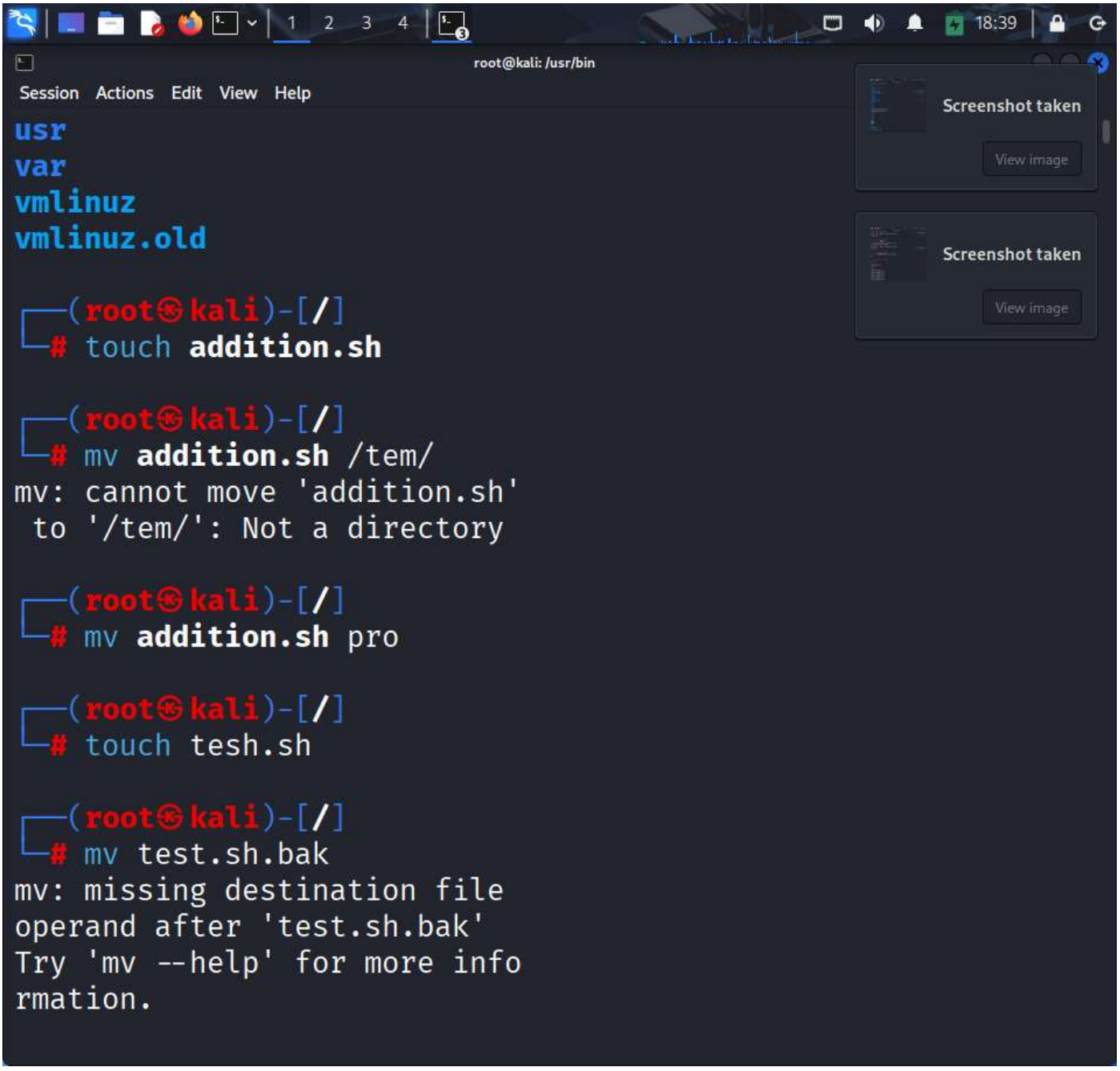
**Fiqure-10**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# ls
addition.sh dev home lib lost+found o
bin etc initrd.img lib32 media p
boot flower.png initrd.img.old lib64 mnt p
┌──(root㉿kali)-[/]
└─# touch report_part1.txt
┌──(root㉿kali)-[/]
└─# touch data_log_{01..05}.csv
┌──(root㉿kali)-[/]
└─# ls
addition.sh data_log_02.csv dev initrd.img
bin data_log_03.csv etc initrd.img.old
boot data_log_04.csv flower.png lib
data_log_01.csv data_log_05.csv home lib32
┌──(root㉿kali)-[/]
└─# mkdir project
┌──(root㉿kali)-[/]
└─# mkdir Linux

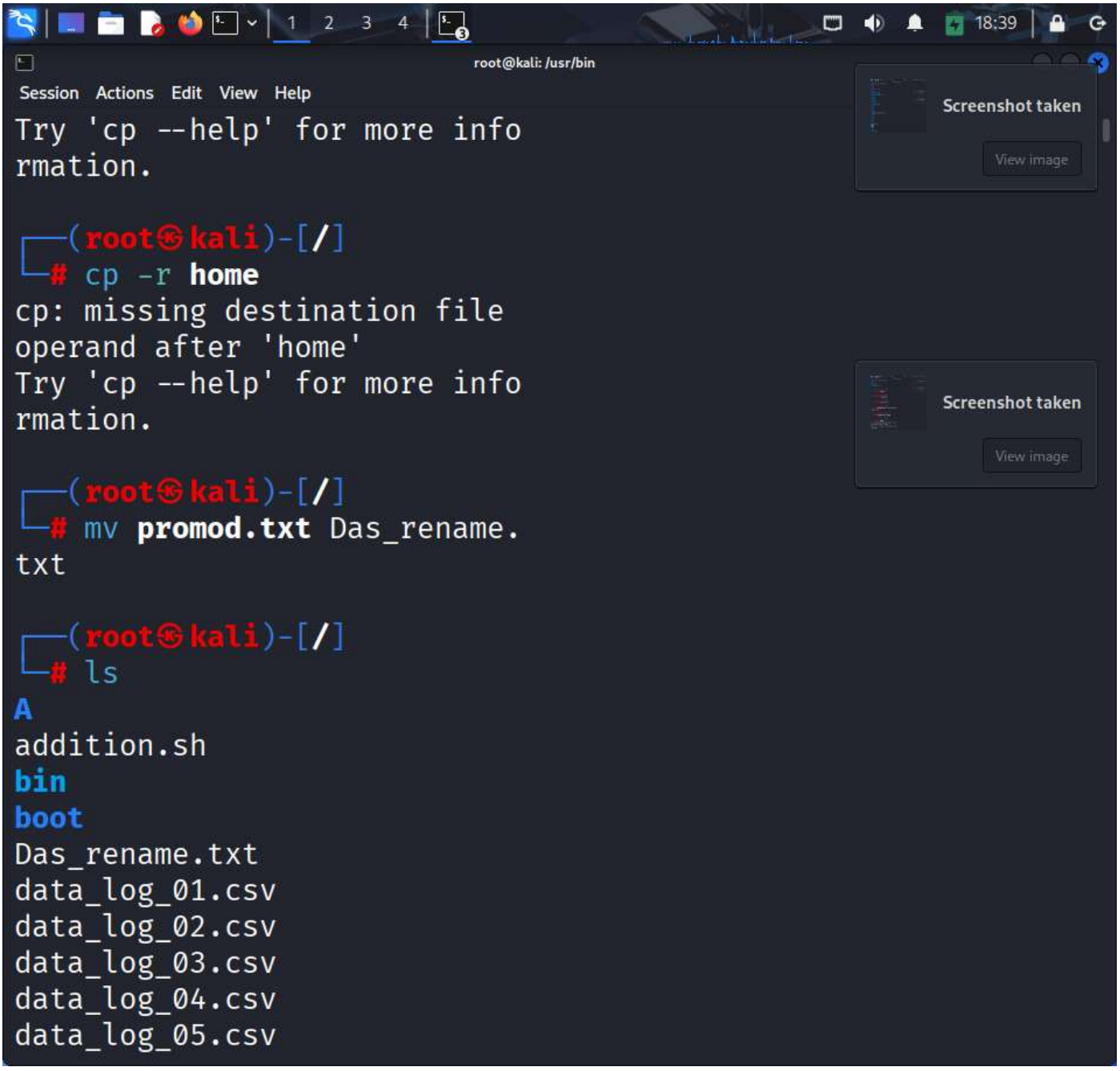
**Fiqure-11**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
rmation.
Screenshot taken
View image
(root㉿kali)-[/]
# mv tesh.sh test.sh.bak
(root㉿kali)-[/]
# touch filter.txt
Screenshot taken
View image
(root㉿kali)-[/]
# cat filter.txt
(root㉿kali)-[/]
# cat Firstfile
cat: Firstfile: No such file
or directory
(root㉿kali)-[/]
# tsosuscshs s
tsosuscshs: command not found
(root㉿kali)-[/]
# touch Firstfile
(root㉿kali)-[/]
# cat Firstfile

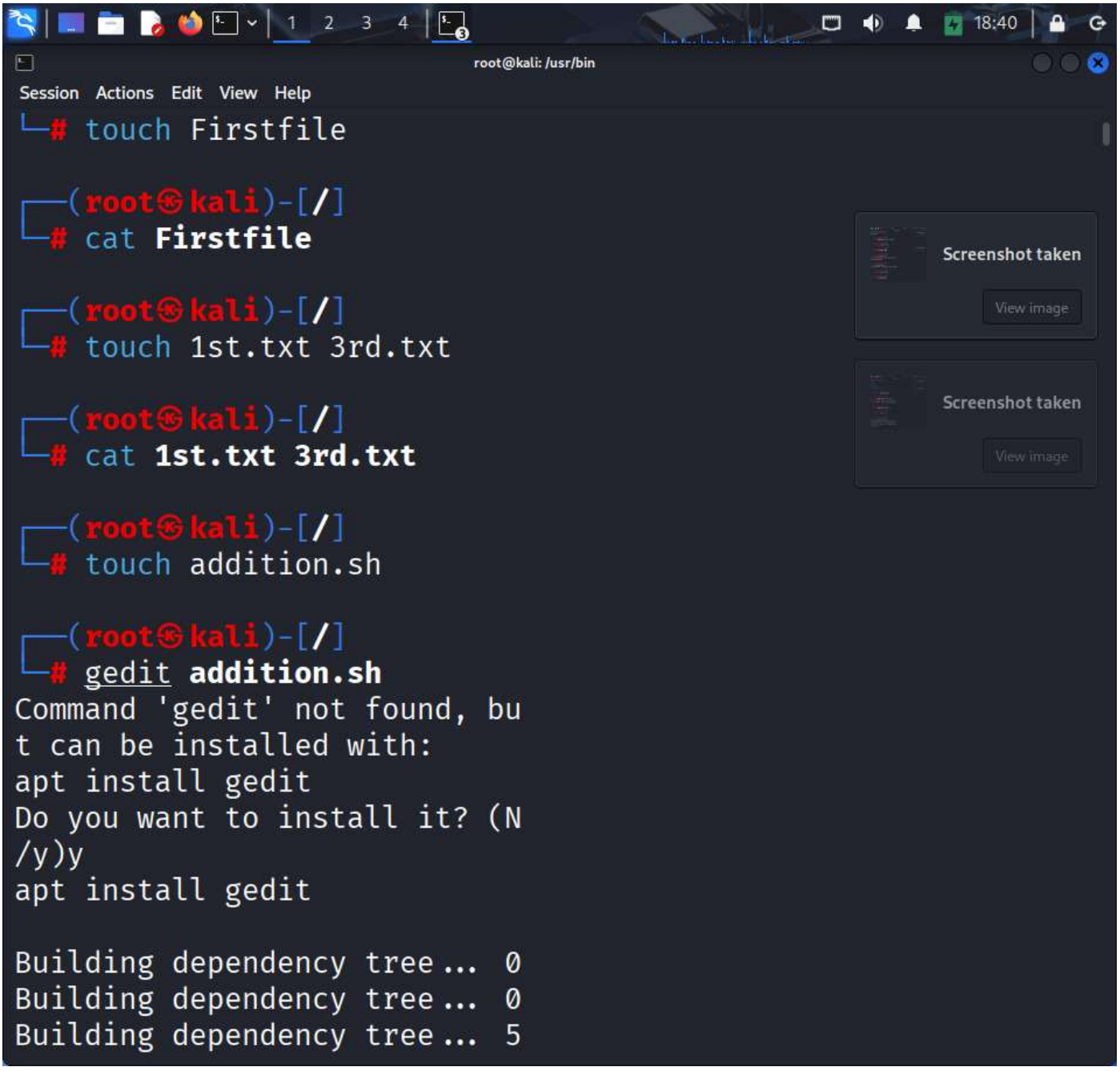
**Fiqure-12**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
usr
var
vmlinuz
vmlinuz.old
┌──(root㉿kali)-[/]
└─# touch addition.sh
┌──(root㉿kali)-[/]
└─# mv addition.sh /tem/
mv: cannot move 'addition.sh'
to '/tem/': Not a directory
┌──(root㉿kali)-[/]
└─# mv addition.sh pro
┌──(root㉿kali)-[/]
└─# touch tesh.sh
┌──(root㉿kali)-[/]
└─# mv test.sh.bak
mv: missing destination file
operand after 'test.sh.bak'
Try 'mv --help' for more info
rmation.
Screenshot taken
View image
Screenshot taken
View image

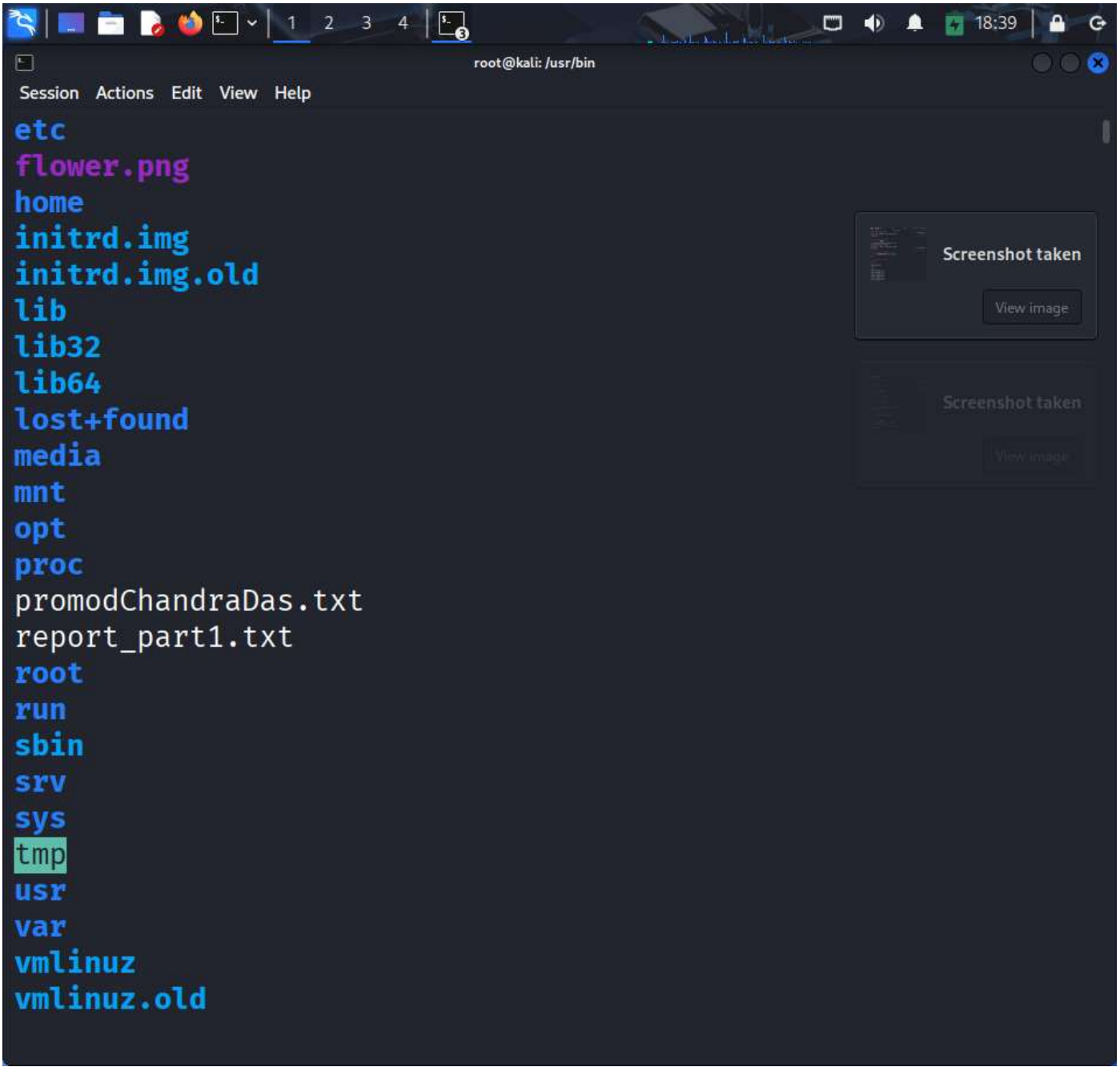
**Fiqure-13**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
Try 'cp --help' for more info
rmation.
(root㉿kali)-[/]
# cp -r home
cp: missing destination file
operand after 'home'
Try 'cp --help' for more info
rmation.
(root㉿kali)-[/]
# mv promod.txt Das_rename.
txt
(root㉿kali)-[/]
# ls
A
addition.sh
bin
boot
Das_rename.txt
data_log_01.csv
data_log_02.csv
data_log_03.csv
data_log_04.csv
data_log_05.csv
Screenshot taken
View image
Screenshot taken
View image

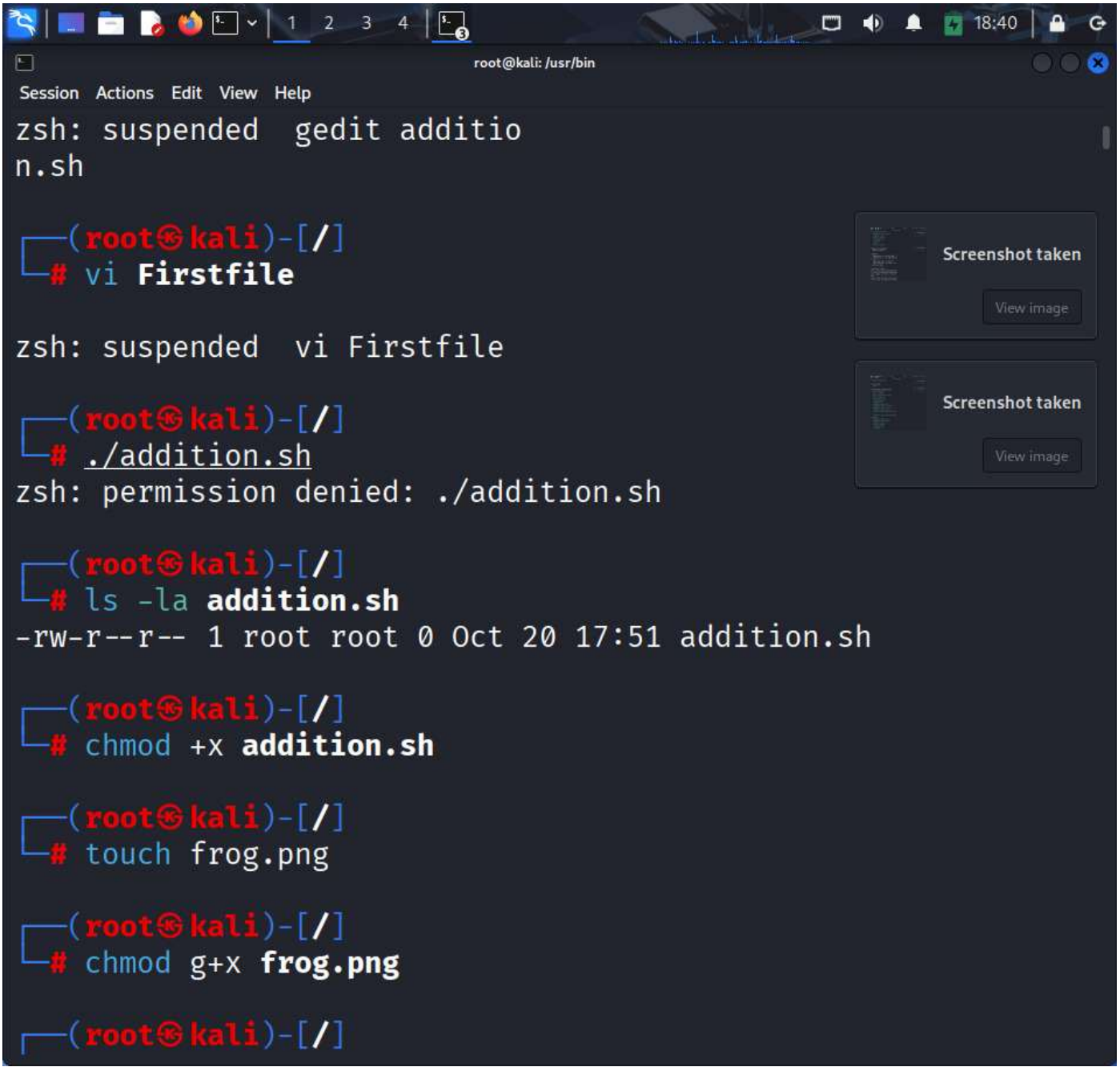
**Fiqure-14**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
└# touch Firstfile
┌──(root㉿kali)-[/]
└# cat Firstfile
┌──(root㉿kali)-[/]
└# touch 1st.txt 3rd.txt
┌──(root㉿kali)-[/]
└# cat 1st.txt 3rd.txt
┌──(root㉿kali)-[/]
└# touch addition.sh
┌──(root㉿kali)-[/]
└# gedit addition.sh
Command 'gedit' not found, bu
t can be installed with:
apt install gedit
Do you want to install it? (N
/y)y
apt install gedit
Building dependency tree ... 0
Building dependency tree ... 0
Building dependency tree ... 5
Screenshot taken
View image
Screenshot taken
View image

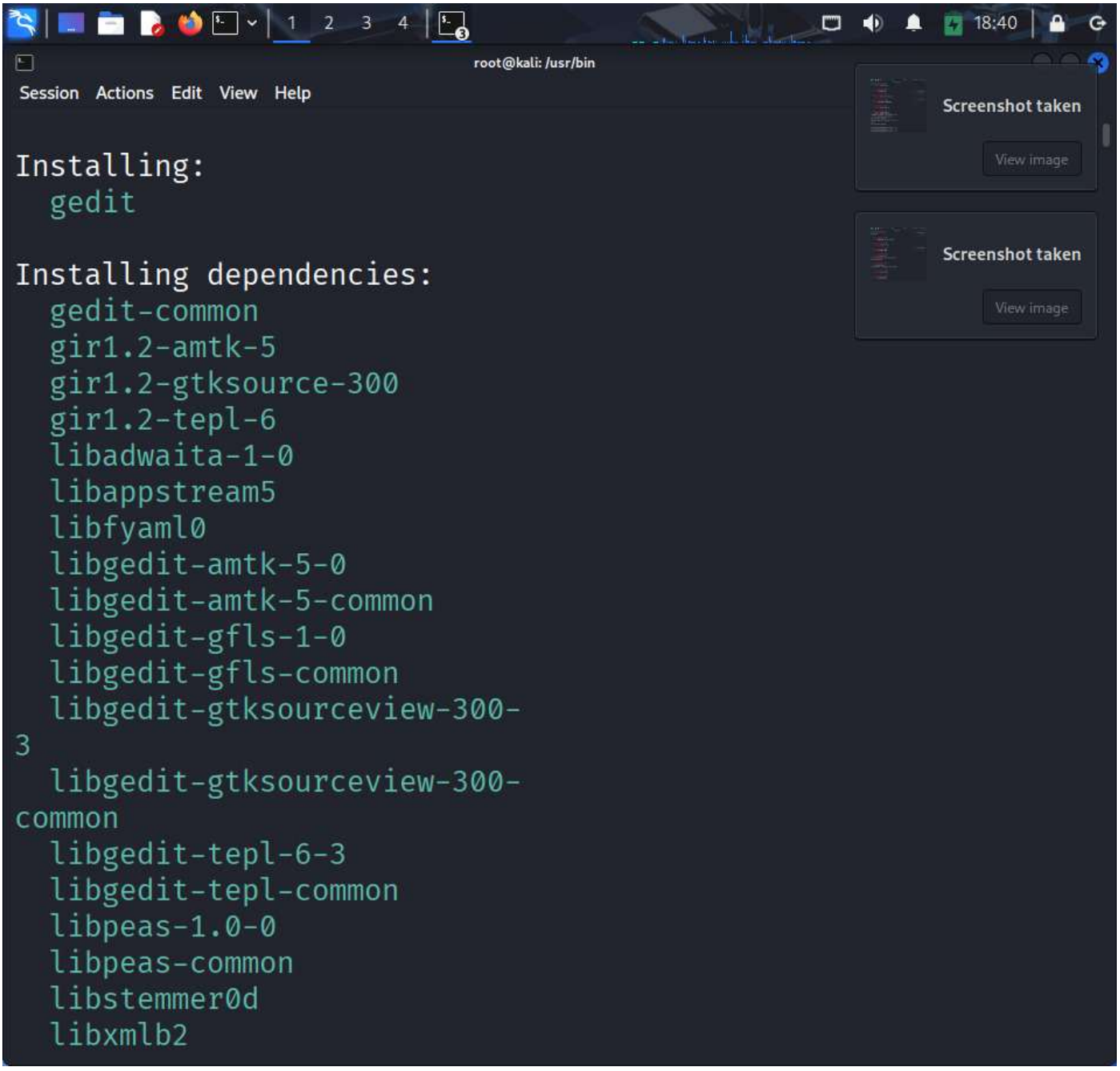
**Fiqure-15**


1 2 3 4
18:39
root@kali: /usr/bin
Session Actions Edit View Help
etc
flower.png
home
initrd.img
initrd.img.old
lib
lib32
lib64
lost+found
media
mnt
opt
proc
promodChandraDas.txt
report_part1.txt
root
run
sbin
srv
sys
tmp
usr
var
vmlinuz
vmlinuz.old
Screenshot taken
View image
Screenshot taken

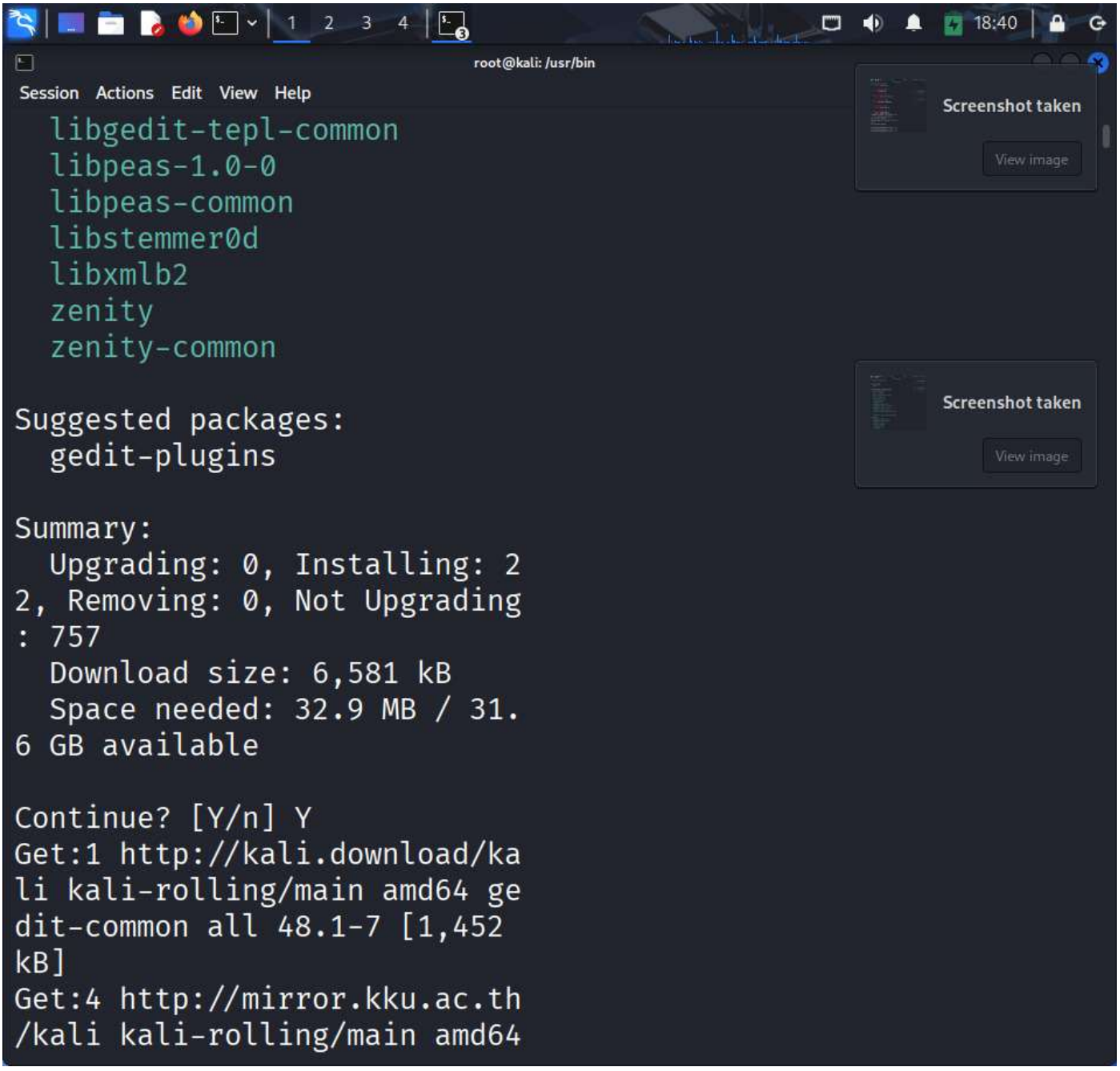
**Fiqure-16**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
zsh: suspended gedit additio
n.sh
(root㉿kali)-[/]
# vi Firstfile
zsh: suspended vi Firstfile
(root㉿kali)-[/]
# ./addition.sh
zsh: permission denied: ./addition.sh
(root㉿kali)-[/]
# ls -la addition.sh
-rw-r--r-- 1 root root 0 Oct 20 17:51 addition.sh
(root㉿kali)-[/]
# chmod +x addition.sh
(root㉿kali)-[/]
# touch frog.png
(root㉿kali)-[/]
# chmod g+x frog.png
(root㉿kali)-[/]
Screenshot taken
View image
Screenshot taken
View image

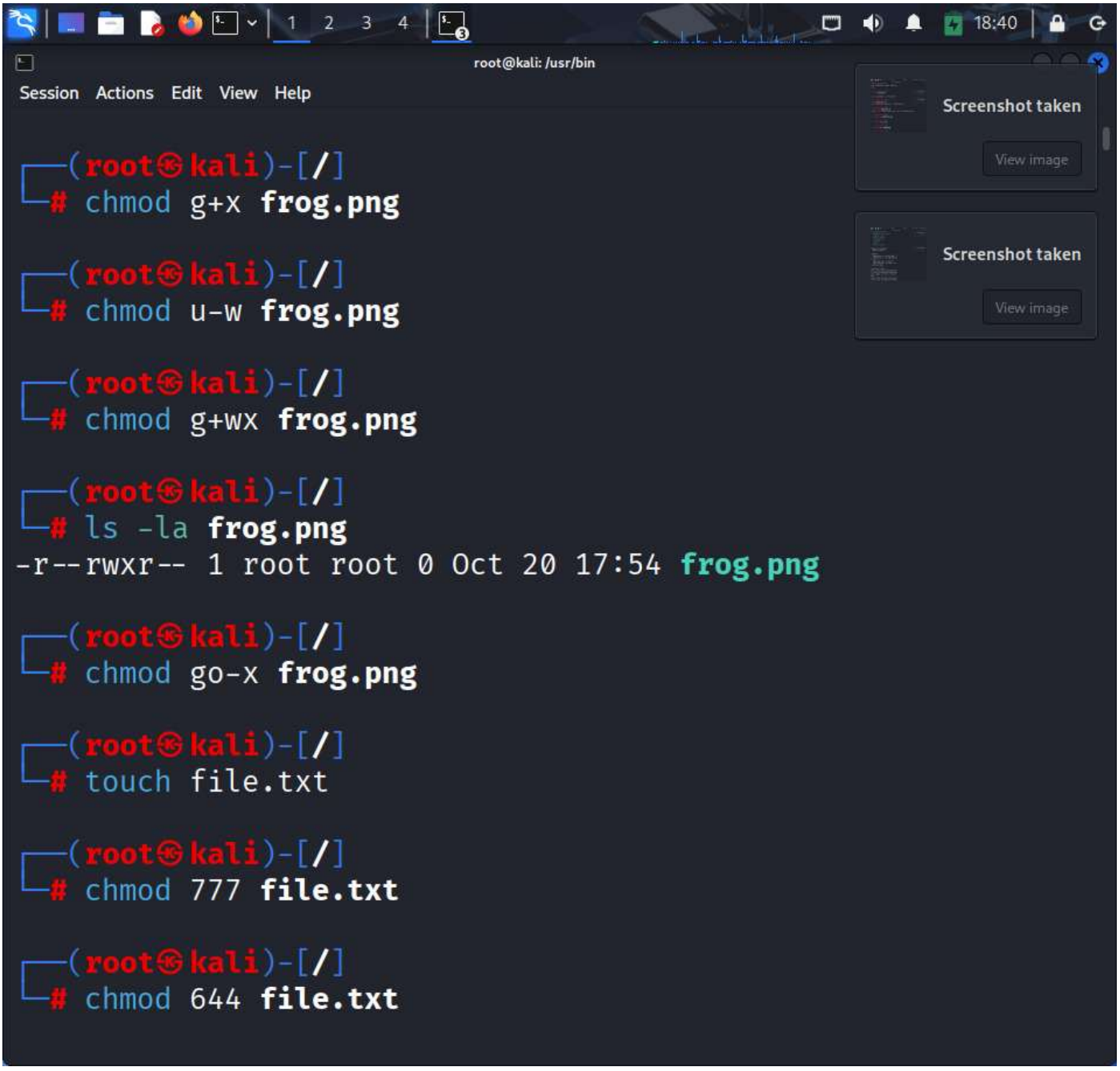
**Fiqure-17**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
Screenshot taken
View image
Installing:
gedit
Installing dependencies:
gedit-common
gir1.2-amtk-5
gir1.2-gtksource-300
gir1.2-tepl-6
libadwaita-1-0
libappstream5
libfyaml0
libgedit-amtk-5-0
libgedit-amtk-5-common
libgedit-gfls-1-0
libgedit-gfls-common
libgedit-gtksourceview-300-3
libgedit-gtksourceview-300-common
libgedit-tepl-6-3
libgedit-tepl-common
libpeas-1.0-0
libpeas-common
libstemmer0d
libxmlb2

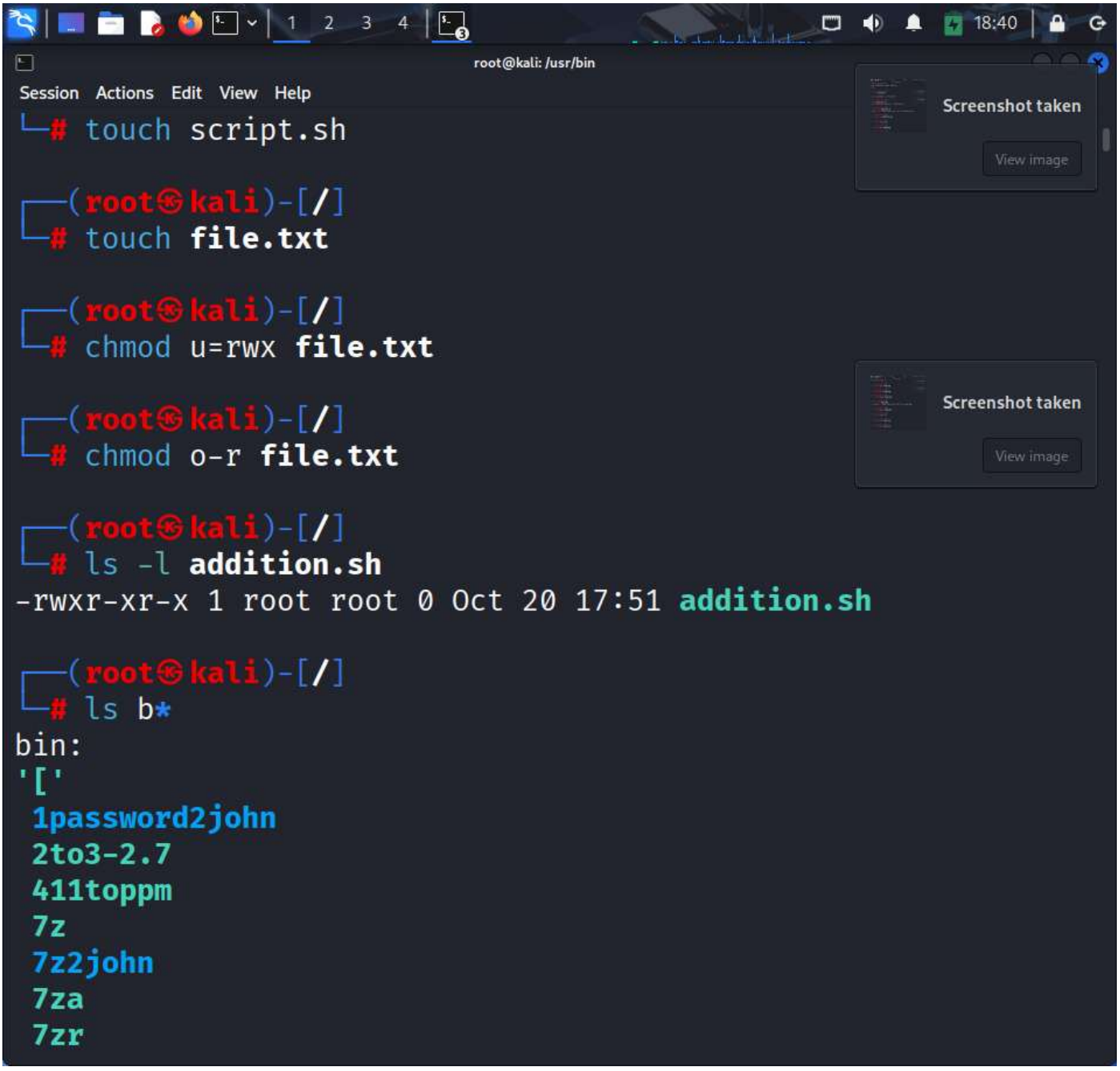
**Fiqure-18**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
libgedit-tepl-common
libpeas-1.0-0
libpeas-common
libstemmer0d
libxmlb2
zenity
zenity-common
Suggested packages:
gedit-plugins
Summary:
Upgrading: 0, Installing: 2
2, Removing: 0, Not Upgrading
: 757
Download size: 6,581 kB
Space needed: 32.9 MB / 31.
6 GB available
Continue? [Y/n] Y
Get:1 http://kali.download/ka
li kali-rolling/main amd64 ge
dit-common all 48.1-7 [1,452
kB]
Get:4 http://mirror.kku.ac.th
/kali kali-rolling/main amd64
Screenshot taken
View image
Screenshot taken
View image

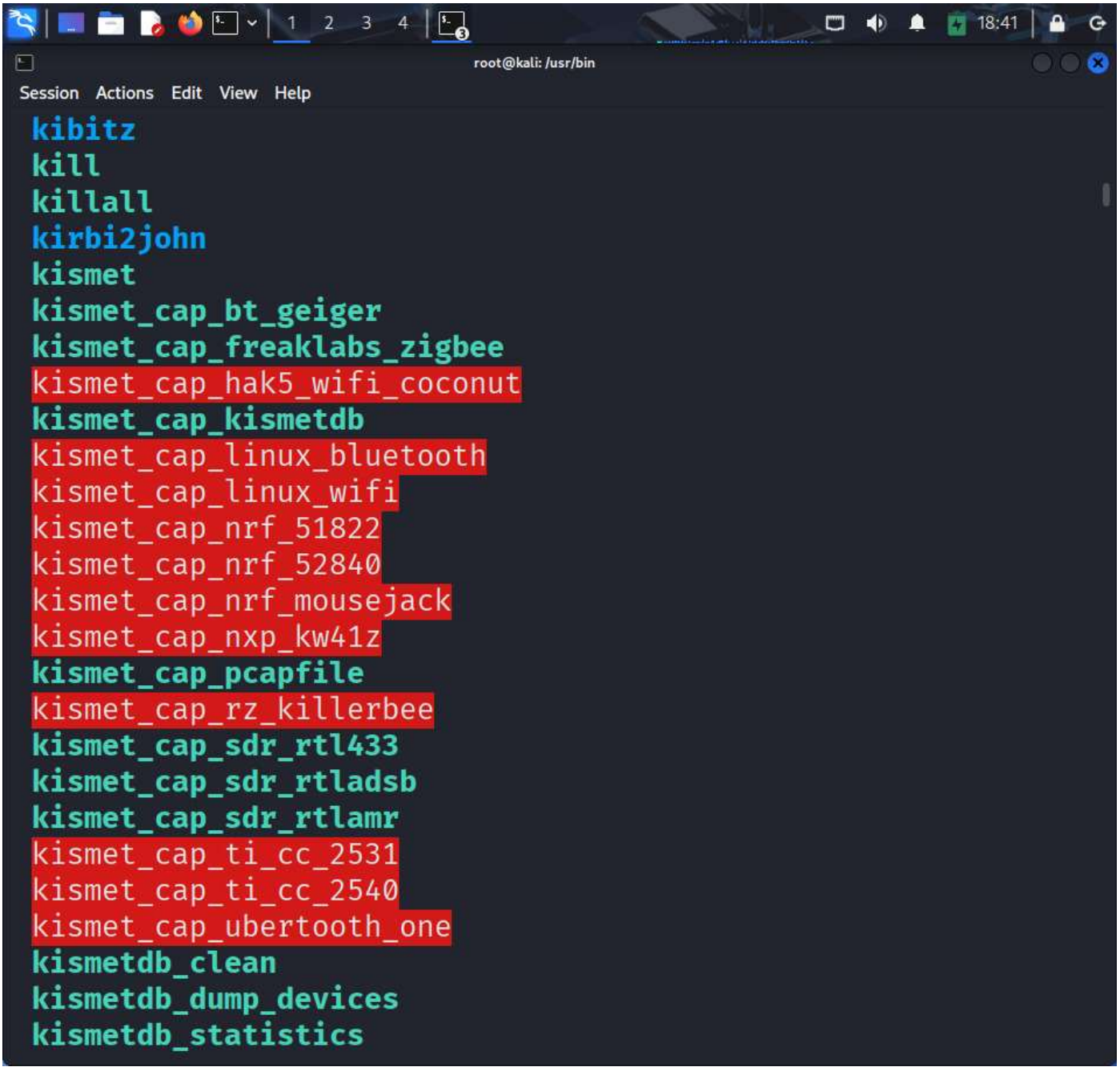
**Fiqure-19**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# chmod g+x frog.png
┌──(root㉿kali)-[/]
└─# chmod u-w frog.png
┌──(root㉿kali)-[/]
└─# chmod g+wx frog.png
┌──(root㉿kali)-[/]
└─# ls -la frog.png
-r--rwxr-- 1 root root 0 Oct 20 17:54 frog.png
┌──(root㉿kali)-[/]
└─# chmod go-x frog.png
┌──(root㉿kali)-[/]
└─# touch file.txt
┌──(root㉿kali)-[/]
└─# chmod 777 file.txt
┌──(root㉿kali)-[/]
└─# chmod 644 file.txt

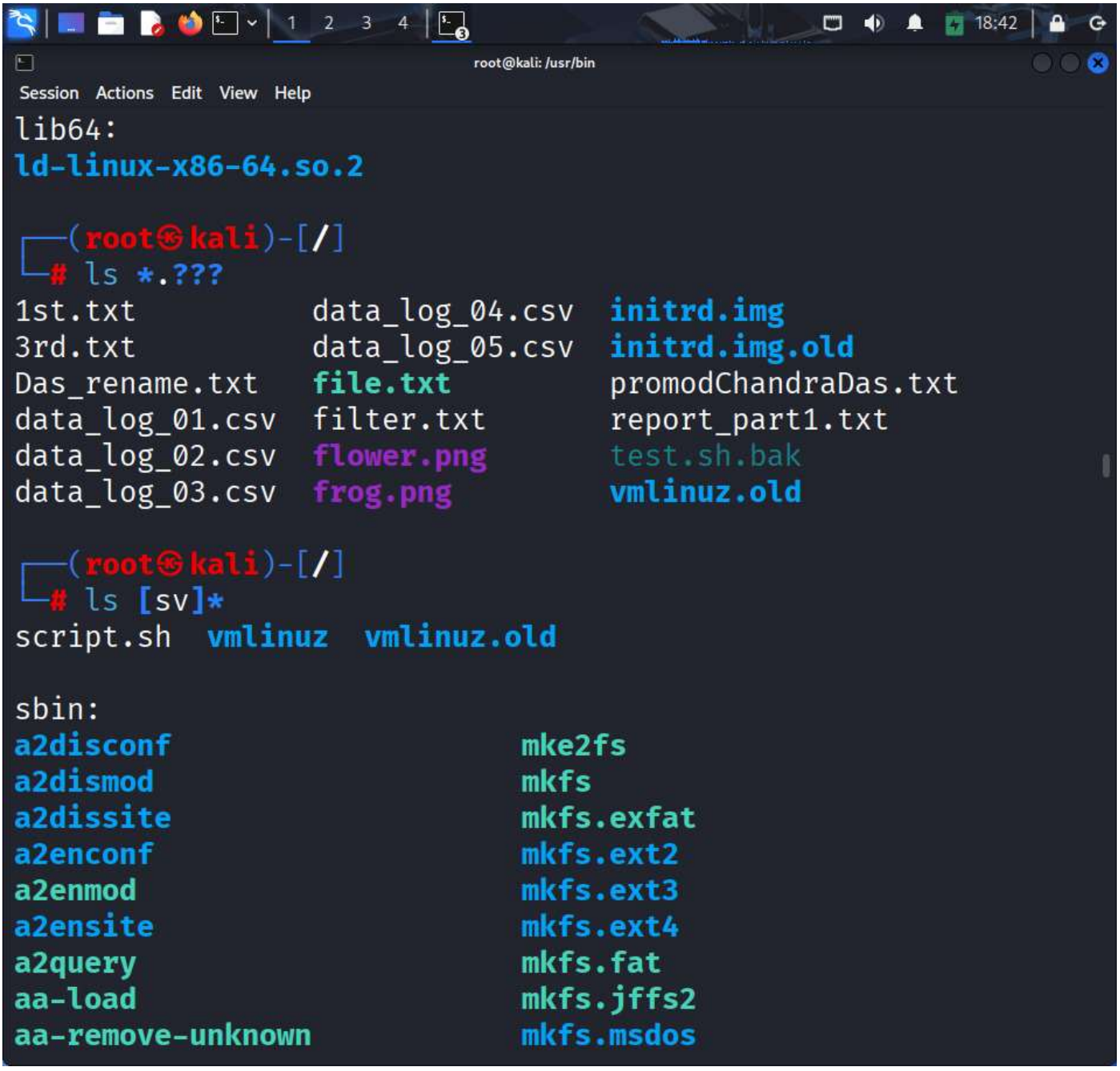
**Fiqure-20**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
└─# touch script.sh
┌──(root㉿kali)-[/]
└─# touch file.txt
┌──(root㉿kali)-[/]
└─# chmod u=rwx file.txt
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# chmod o-r file.txt
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# ls -l addition.sh
-rwxr-xr-x 1 root root 0 Oct 20 17:51 addition.sh
┌──(root㉿kali)-[/]
└─# ls b*
bin:
'['
1password2john
2to3-2.7
411toppm
7z
7z2john
7za
7zr

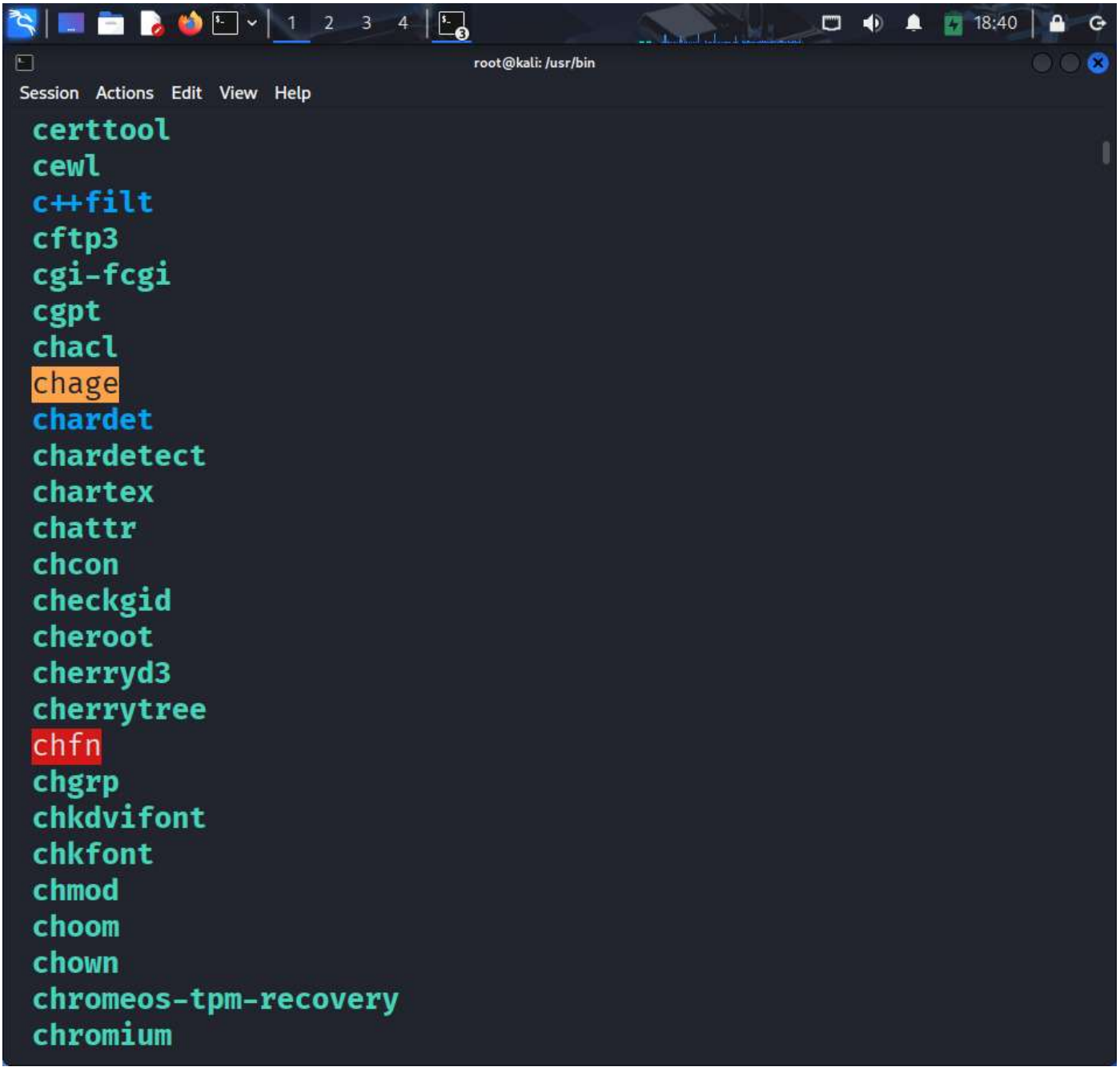
**Fiqure-21**


1 2 3 4
18:41
root@kali: /usr/bin
Session Actions Edit View Help
kibitz
kill
killall
kirbi2john
kismet
kismet_cap_bt_geiger
kismet_cap_freaklabs_zigbee
kismet_cap_hak5_wifi_coconut
kismet_cap_kismetdb
kismet_cap_linux_bluetooth
kismet_cap_linux_wifi
kismet_cap_nrf_51822
kismet_cap_nrf_52840
kismet_cap_nrf_mousejack
kismet_cap_nxp_kw41z
kismet_cap_pcapfile
kismet_cap_rz_killerbee
kismet_cap_sdr_rtl433
kismet_cap_sdr_rtladsb
kismet_cap_sdr_rtlamr
kismet_cap_ti_cc_2531
kismet_cap_ti_cc_2540
kismet_cap_ubertooth_one
kismetdb_clean
kismetdb_dump_devices
kismetdb_statistics

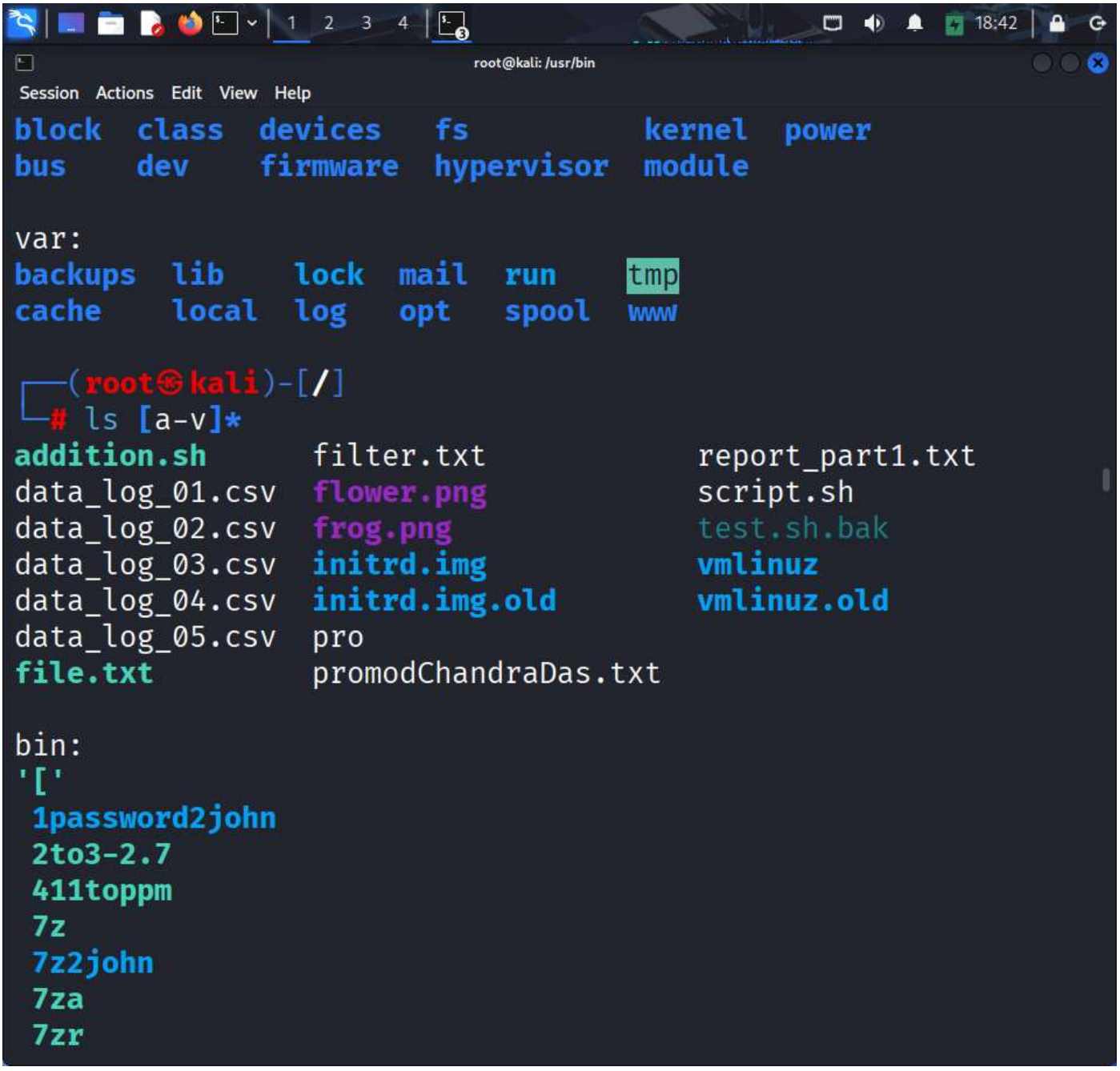
**Fiqure-22**


1 2 3 4
18:42
root@kali: /usr/bin
Session Actions Edit View Help
lib64:
ld-linux-x86-64.so.2
┌──(root㉿kali)-[/]
└─# ls *.???
1st.txt data_log_04.csv initrd.img
3rd.txt data_log_05.csv initrd.img.old
Das_rename.txt file.txt promodChandraDas.txt
data_log_01.csv filter.txt report_part1.txt
data_log_02.csv flower.png test.sh.bak
data_log_03.csv frog.png vmlinuz.old
┌──(root㉿kali)-[/]
└─# ls [sv]*
script.sh vmlinuz vmlinuz.old
sbin:
a2disconf mke2fs
a2dismod mkfs
a2dissite mkfs.exfat
a2enconf mkfs.ext2
a2enmod mkfs.ext3
a2ensite mkfs.ext4
a2query mkfs.fat
aa-load mkfs.jffs2
aa-remove-unknown mkfs.msdos

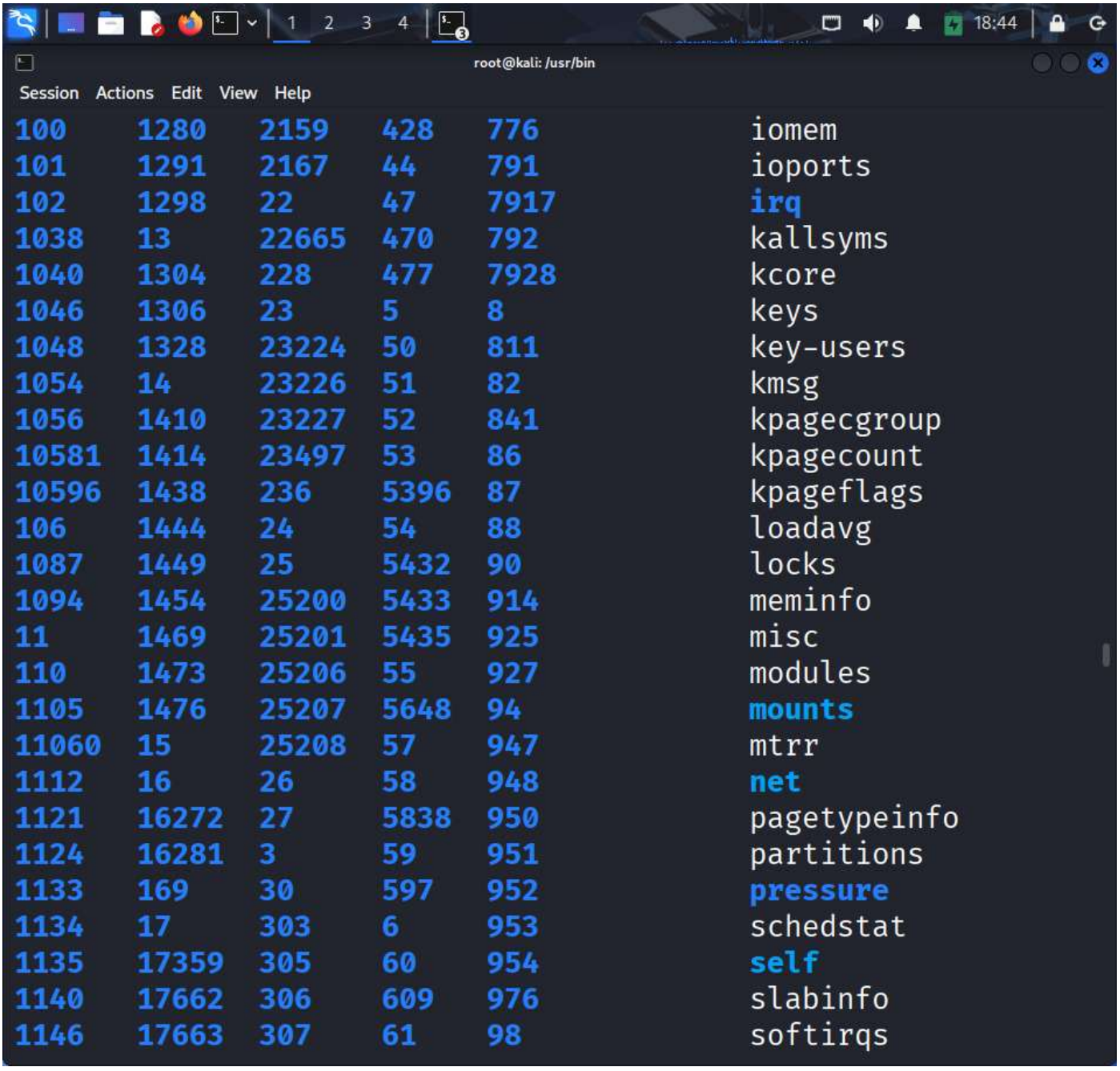
**Fiqure-23**


1 2 3 4
18:40
root@kali: /usr/bin
Session Actions Edit View Help
certtool
cewl
c++filt
cftp3
cgi-fcgi
cgpt
chacl
chage
chardet
chardetect
chartex
chattr
chcon
checkgid
cheroot
cherryd3
cherrytree
chfn
chgrp
chkdvifont
chkfont
chmod
choom
chown
chromeos-tpm-recovery
chromium

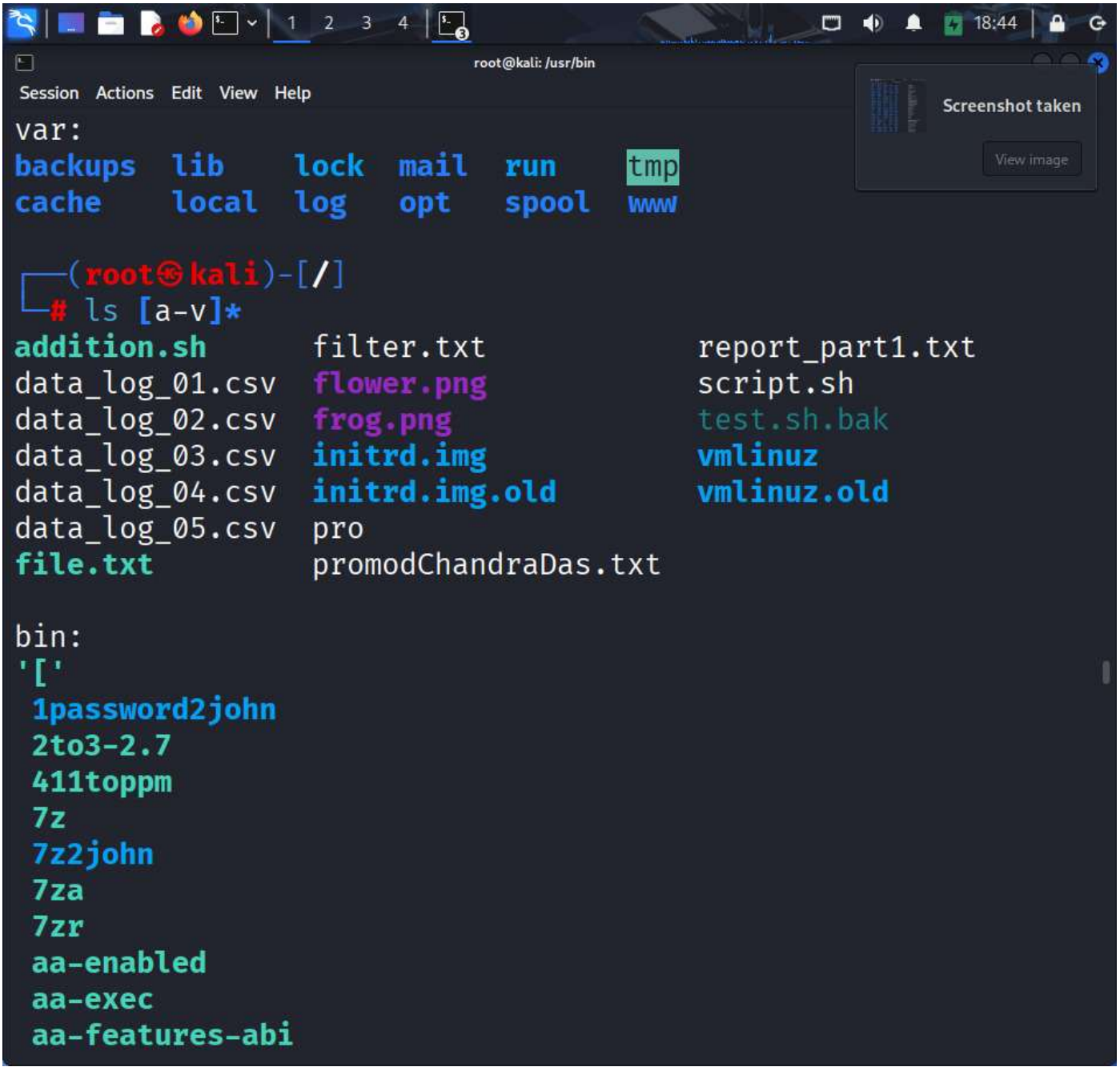
**Fiqure-24**


1 2 3 4
18:42
root@kali: /usr/bin
Session Actions Edit View Help
block class devices fs kernel power
bus dev firmware hypervisor module
var:
backups lib lock mail run tmp
cache local log opt spool www
┌──(root㉿kali)-[/]
└─# ls [a-v]*
addition.sh filter.txt report_part1.txt
data_log_01.csv flower.png script.sh
data_log_02.csv frog.png test.sh.bak
data_log_03.csv initrd.img vmlinuz
data_log_04.csv initrd.img.old vmlinuz.old
data_log_05.csv pro
file.txt promodChandraDas.txt
bin:
'['
1password2john
2to3-2.7
411toppm
7z
7z2john
7za
7zr

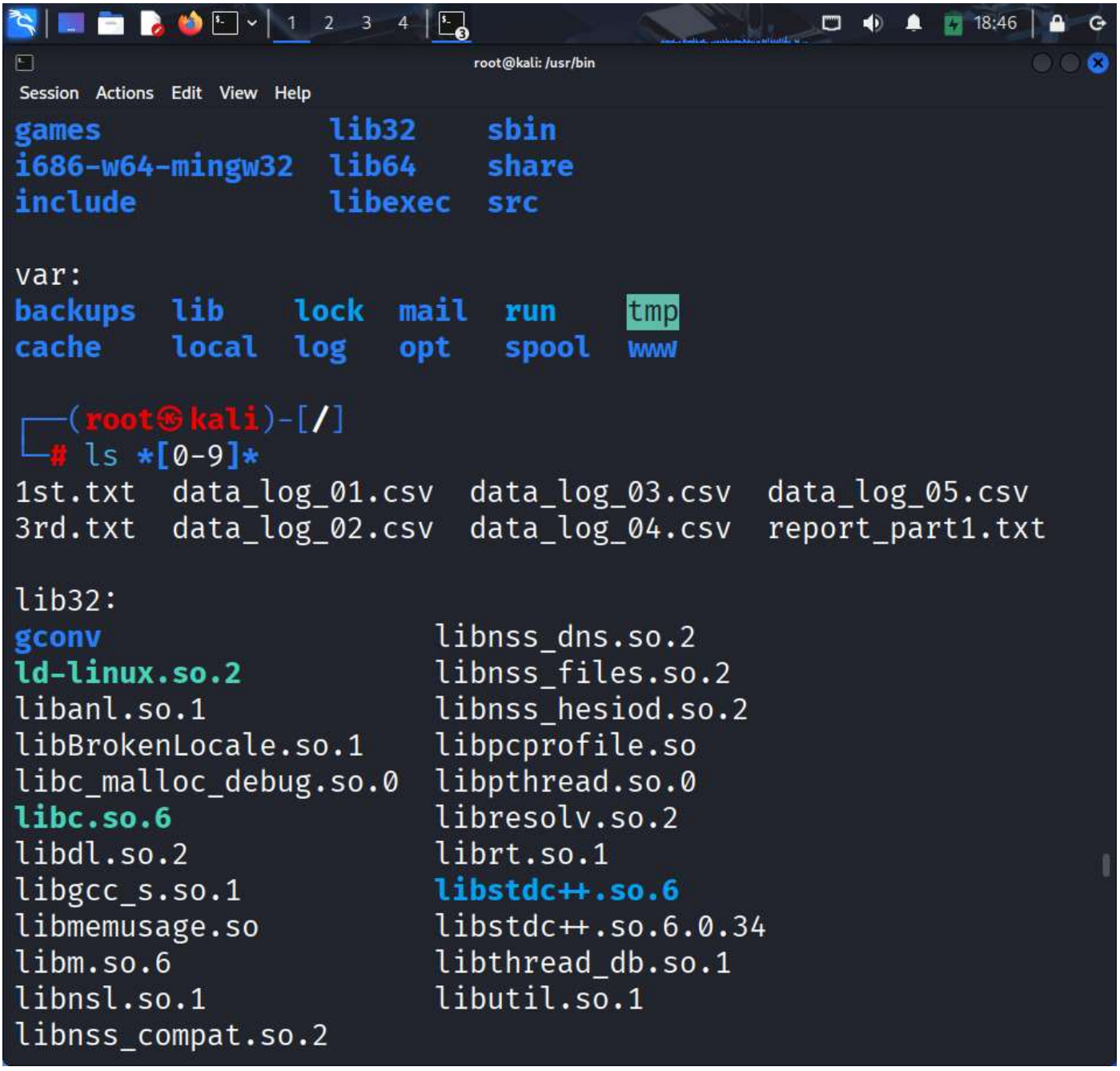
**Fiqure-25**


1 2 3 4
18:44
root@kali: /usr/bin
Session Actions Edit View Help
100 1280 2159 428 776 iomem
101 1291 2167 44 791 ioports
102 1298 22 47 7917 irq
1038 13 22665 470 792 kallsyms
1040 1304 228 477 7928 kcore
1046 1306 23 5 8 keys
1048 1328 23224 50 811 key-users
1054 14 23226 51 82 kmsg
1056 1410 23227 52 841 kpagecgroup
10581 1414 23497 53 86 kpagecount
10596 1438 236 5396 87 kpageflags
106 1444 24 54 88 loadavg
1087 1449 25 5432 90 locks
1094 1454 25200 5433 914 meminfo
11 1469 25201 5435 925 misc
110 1473 25206 55 927 modules
1105 1476 25207 5648 94 mounts
11060 15 25208 57 947 mtrr
1112 16 26 58 948 net
1121 16272 27 5838 950 pagetypeinfo
1124 16281 3 59 951 partitions
1133 169 30 597 952 pressure
1134 17 303 6 953 schedstat
1135 17359 305 60 954 self
1140 17662 306 609 976 slabinfo
1146 17663 307 61 98 softirqs

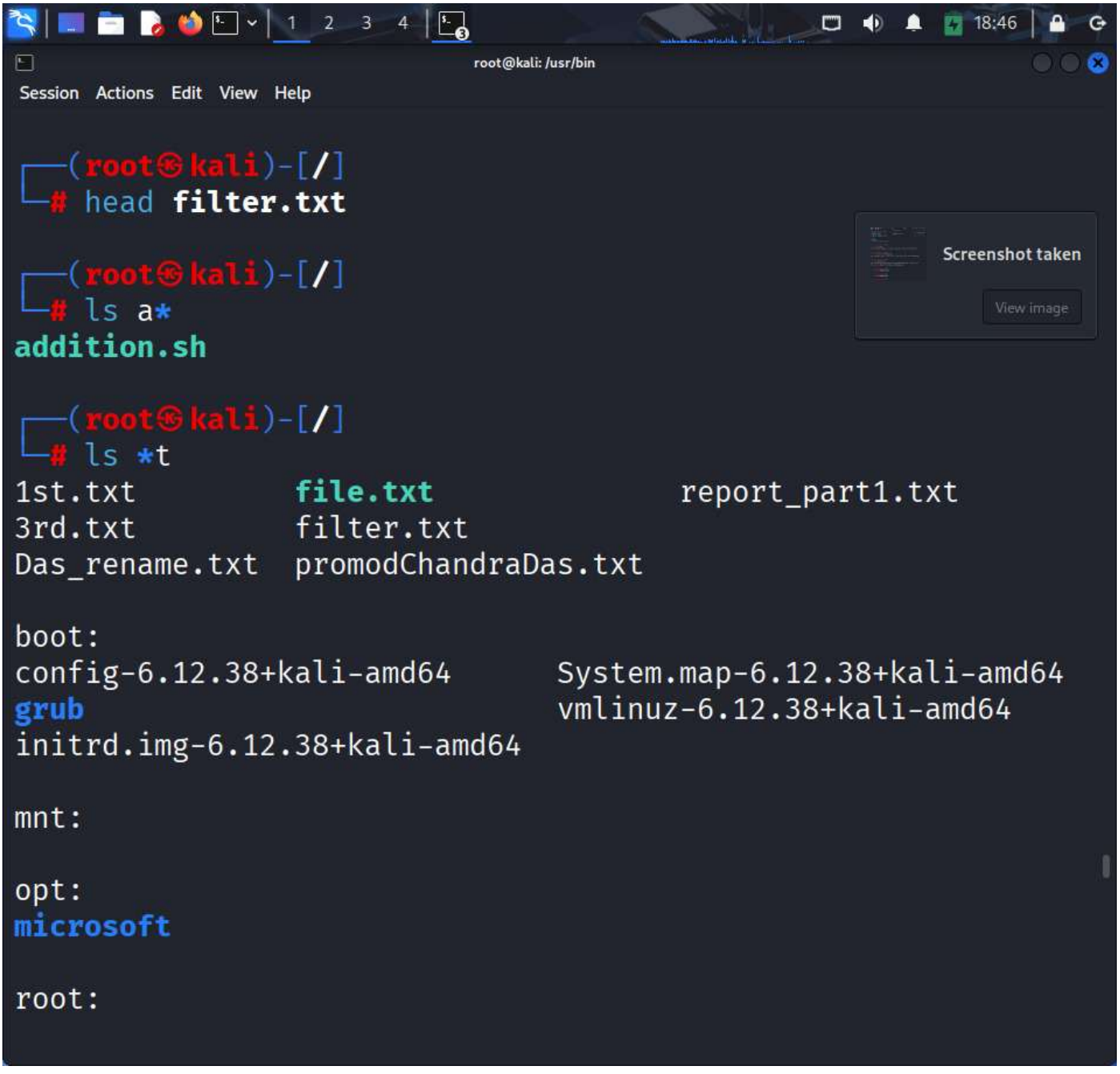
**Fiqure-26**


1 2 3 4
18:44
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
var:
backups lib lock mail run tmp
cache local log opt spool www
┌──(root㉿kali)-[/]
└─# ls [a-v]*
addition.sh filter.txt report_part1.txt
data_log_01.csv flower.png script.sh
data_log_02.csv frog.png test.sh.bak
data_log_03.csv initrd.img vmlinuz
data_log_04.csv initrd.img.old vmlinuz.old
data_log_05.csv pro
file.txt promodChandraDas.txt
bin:
'['
1password2john
2to3-2.7
411toppm
7z
7z2john
7za
7zr
aa-enabled
aa-exec
aa-features-abi

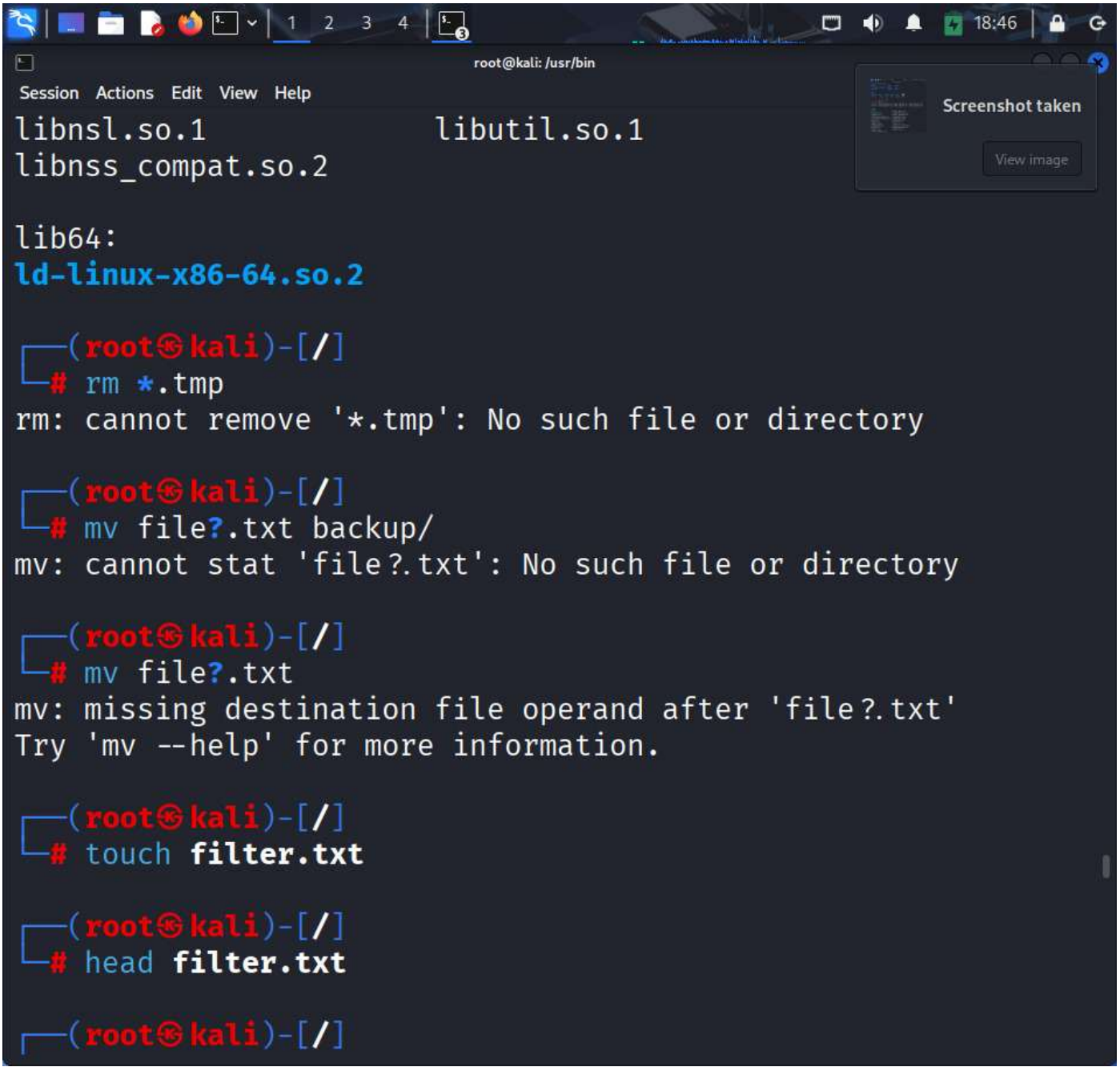
**Fiqure-27**


1 2 3 4
18:46
root@kali: /usr/bin
Session Actions Edit View Help
games lib32 sbin
i686-w64-mingw32 lib64 share
include libexec src
var:
backups lib lock mail run tmp
cache local log opt spool www
┌──(root㉿kali)-[/]
└─# ls *[0-9]*
1st.txt data_log_01.csv data_log_03.csv data_log_05.csv
3rd.txt data_log_02.csv data_log_04.csv report_part1.txt
lib32:
gconv libnss_dns.so.2
ld-linux.so.2 libnss_files.so.2
libanl.so.1 libnss_hesiod.so.2
libBrokenLocale.so.1 libpcprofile.so
libc_malloc_debug.so.0 libpthread.so.0
libc.so.6 libresolv.so.2
libdl.so.2 librt.so.1
libgcc_s.so.1 libstdc++.so.6
libmemusage.so libstdc++.so.6.0.34
libm.so.6 libthread_db.so.1
libnsl.so.1 libutil.so.1
libnss_compat.so.2

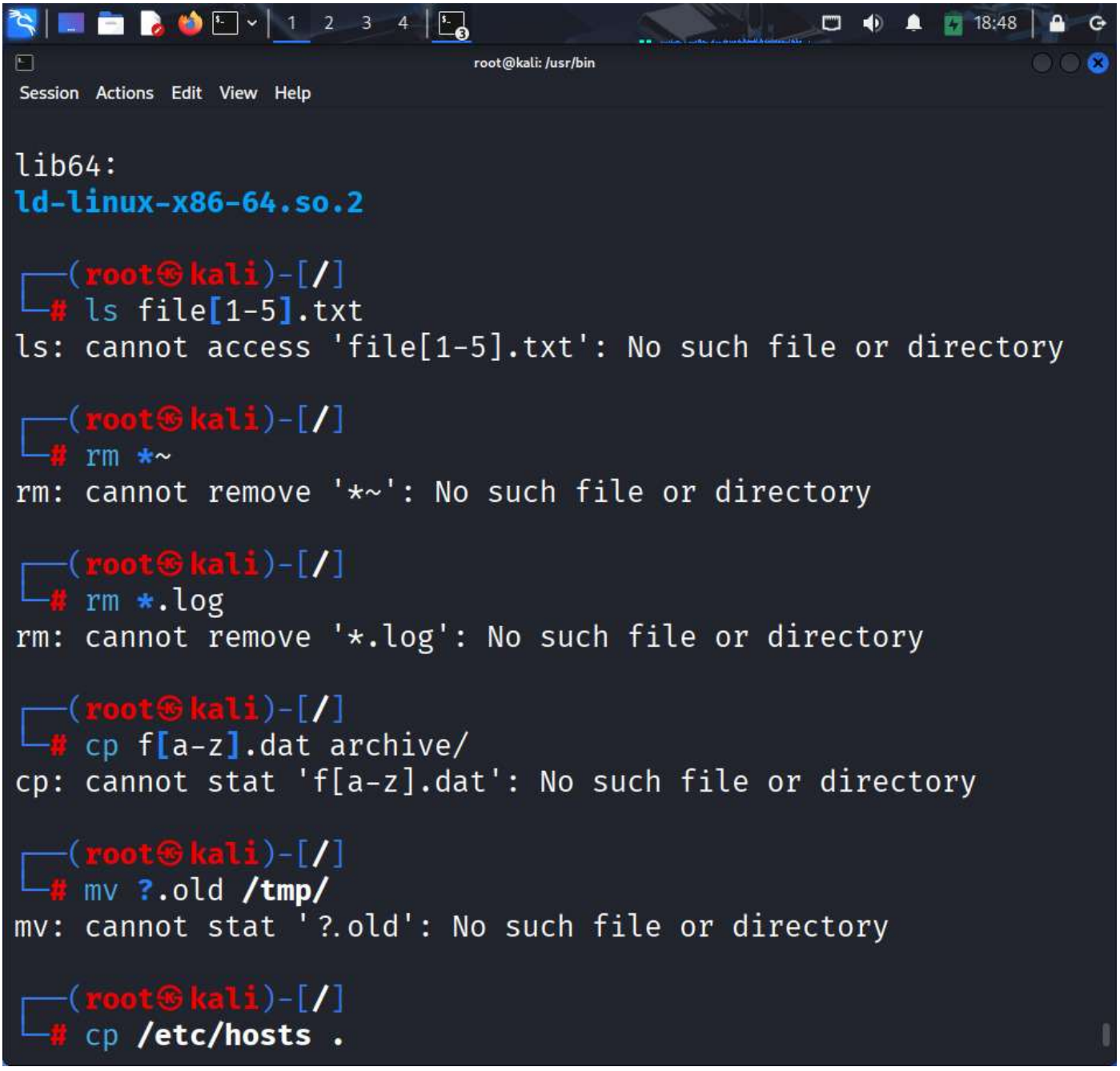
**Fiqure-28**


1 2 3 4
18:46
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/]
└─# head filter.txt
┌──(root㉿kali)-[/]
└─# ls a*
addition.sh
┌──(root㉿kali)-[/]
└─# ls *t
1st.txt file.txt report_part1.txt
3rd.txt filter.txt
Das_rename.txt promodChandraDas.txt
boot:
config-6.12.38+kali-amd64 System.map-6.12.38+kali-amd64
grub vmlinuz-6.12.38+kali-amd64
initrd.img-6.12.38+kali-amd64
mnt:
opt:
microsoft
root:
Screenshot taken
View image

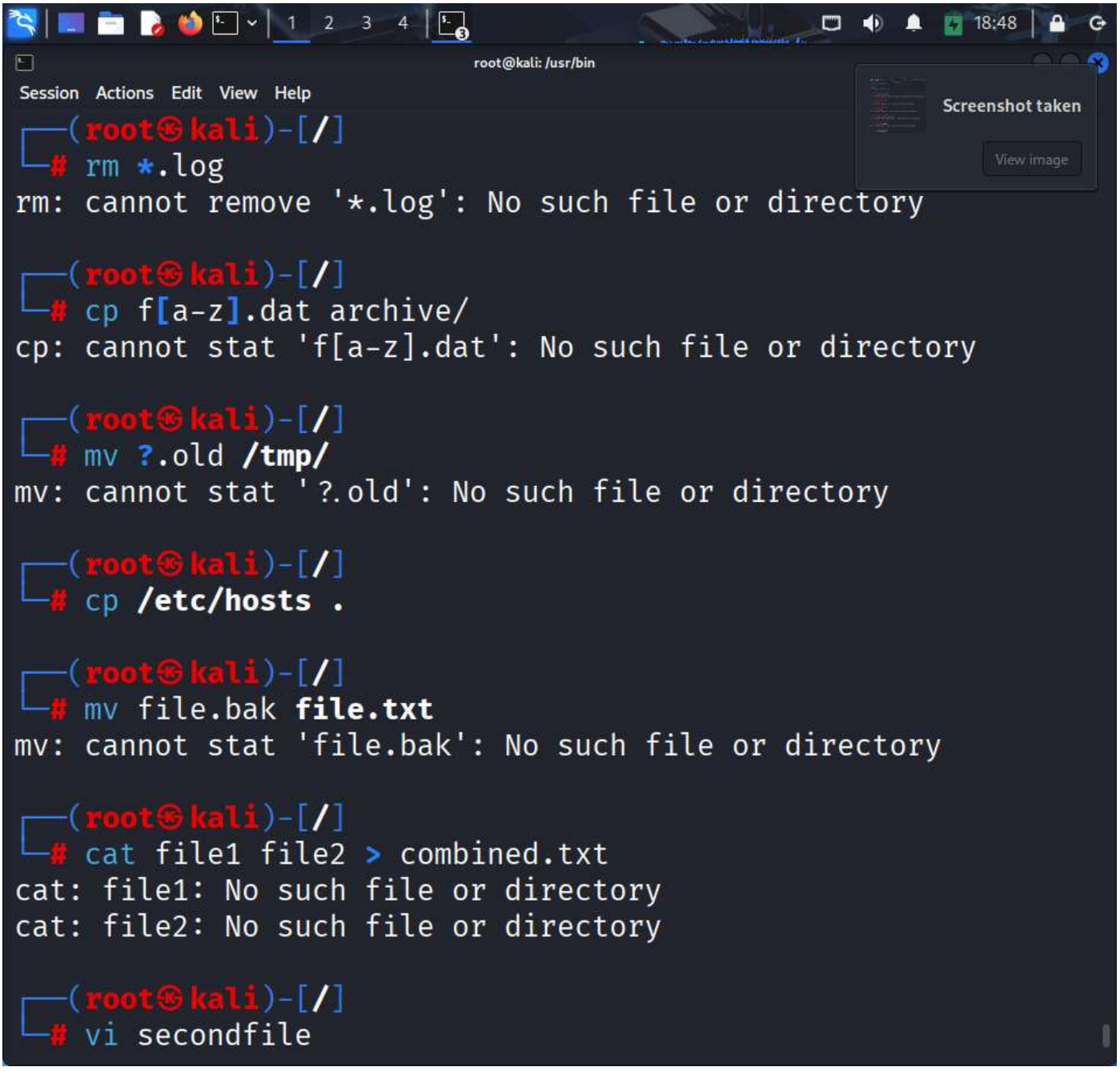
**Fiqure-29**


1 2 3 4
18:46
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
libnsl.so.1 libutil.so.1
libnss_compat.so.2
lib64:
ld-linux-x86-64.so.2
┌──(root㉿kali)-[/]
└─# rm *.tmp
rm: cannot remove '*.tmp': No such file or directory
┌──(root㉿kali)-[/]
└─# mv file?.txt backup/
mv: cannot stat 'file?.txt': No such file or directory
┌──(root㉿kali)-[/]
└─# mv file?.txt
mv: missing destination file operand after 'file?.txt'
Try 'mv --help' for more information.
┌──(root㉿kali)-[/]
└─# touch filter.txt
┌──(root㉿kali)-[/]
└─# head filter.txt
┌──(root㉿kali)-[/]

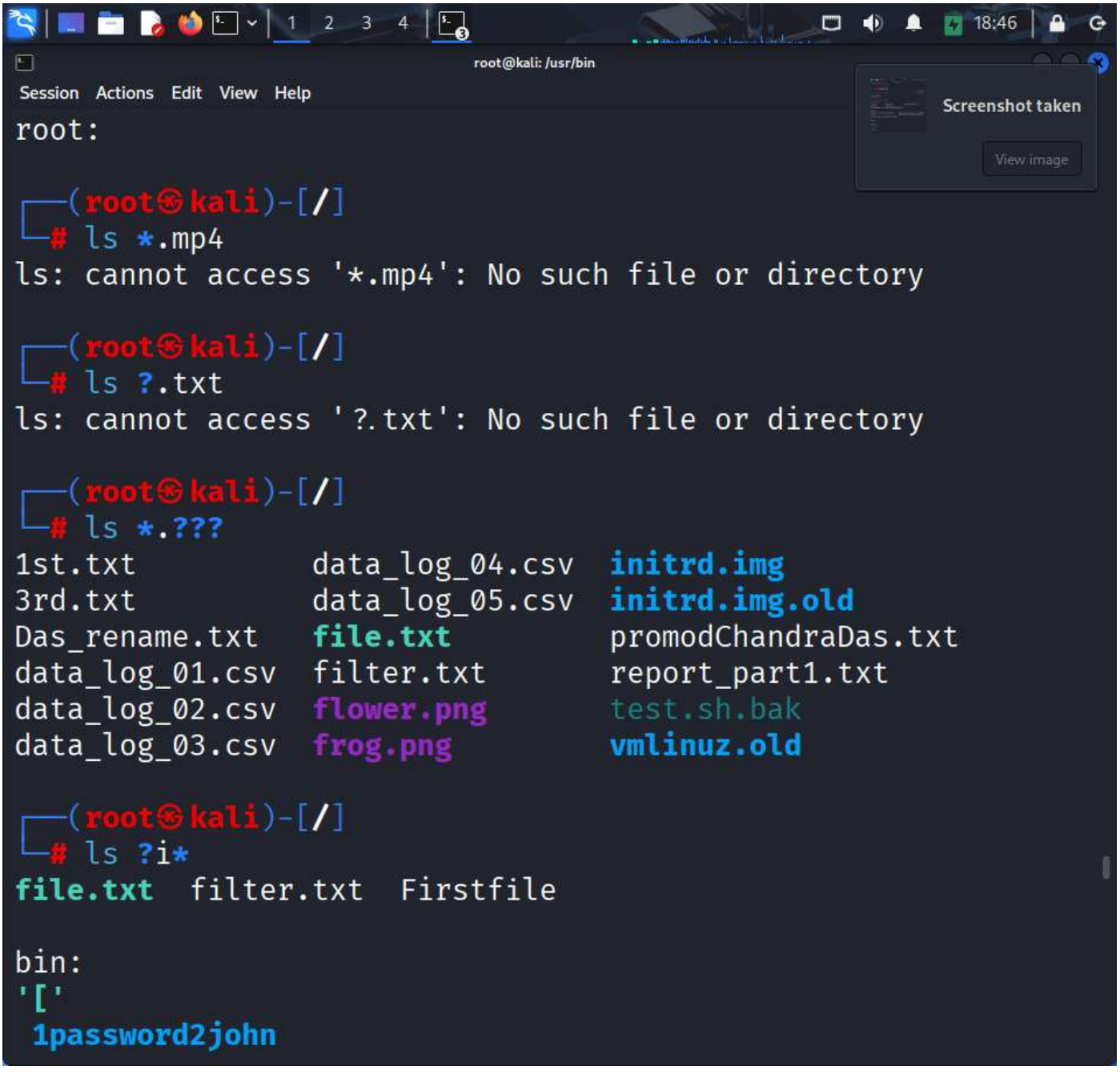
**Fiqure-30**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
lib64:
ld-linux-x86-64.so.2
┌──(root㉿kali)-[/]
└─# ls file[1-5].txt
ls: cannot access 'file[1-5].txt': No such file or directory
┌──(root㉿kali)-[/]
└─# rm *~
rm: cannot remove '*~': No such file or directory
┌──(root㉿kali)-[/]
└─# rm *.log
rm: cannot remove '*.log': No such file or directory
┌──(root㉿kali)-[/]
└─# cp f[a-z].dat archive/
cp: cannot stat 'f[a-z].dat': No such file or directory
┌──(root㉿kali)-[/]
└─# mv ?.old /tmp/
mv: cannot stat '?.old': No such file or directory
┌──(root㉿kali)-[/]
└─# cp /etc/hosts .

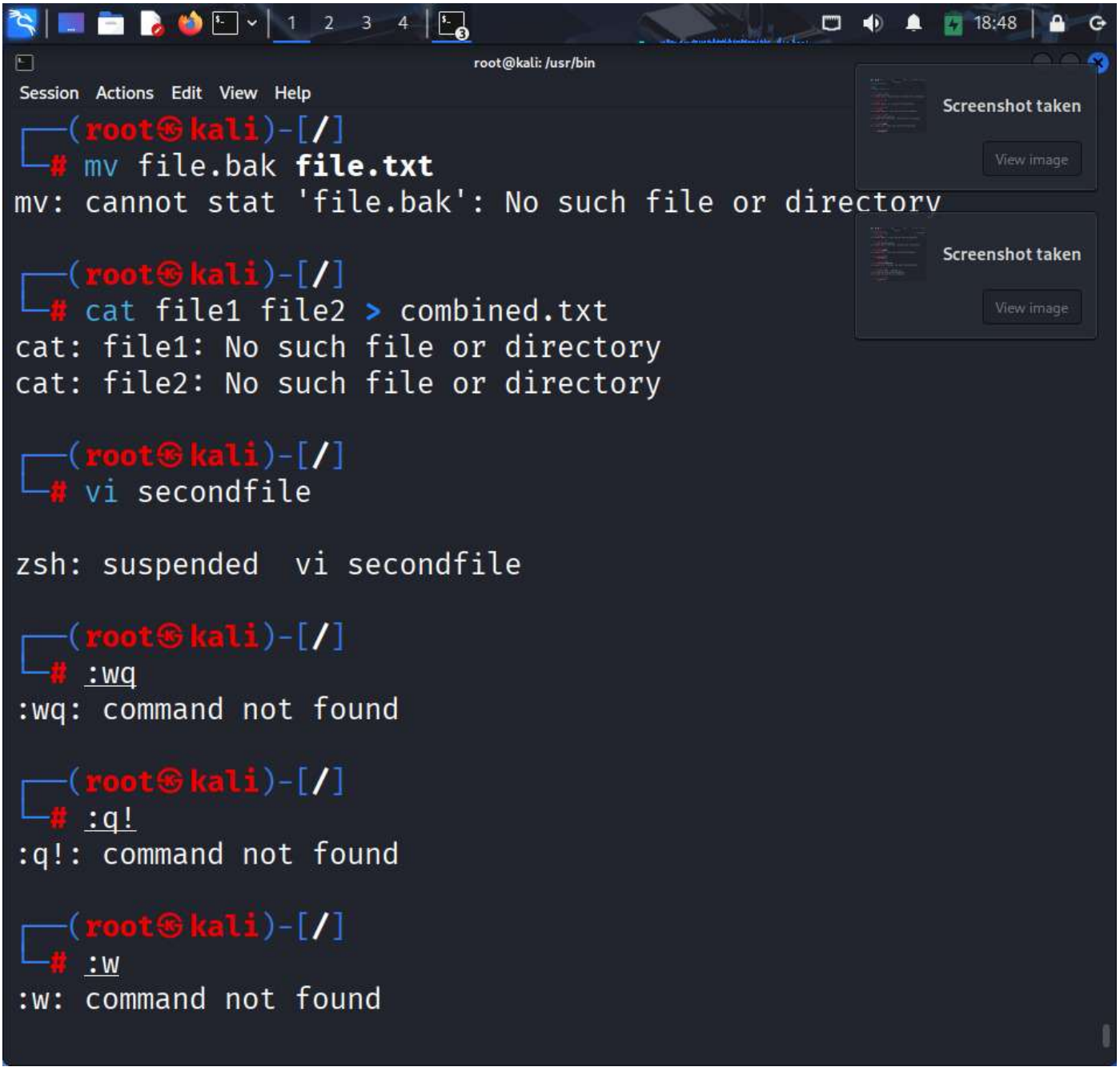
**Fiqure-31**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# rm *.log
rm: cannot remove '*.log': No such file or directory
┌──(root㉿kali)-[/]
└─# cp f[a-z].dat archive/
cp: cannot stat 'f[a-z].dat': No such file or directory
┌──(root㉿kali)-[/]
└─# mv ?.old /tmp/
mv: cannot stat '?.old': No such file or directory
┌──(root㉿kali)-[/]
└─# cp /etc/hosts .
┌──(root㉿kali)-[/]
└─# mv file.bak file.txt
mv: cannot stat 'file.bak': No such file or directory
┌──(root㉿kali)-[/]
└─# cat file1 file2 > combined.txt
cat: file1: No such file or directory
cat: file2: No such file or directory
┌──(root㉿kali)-[/]
└─# vi secondfile

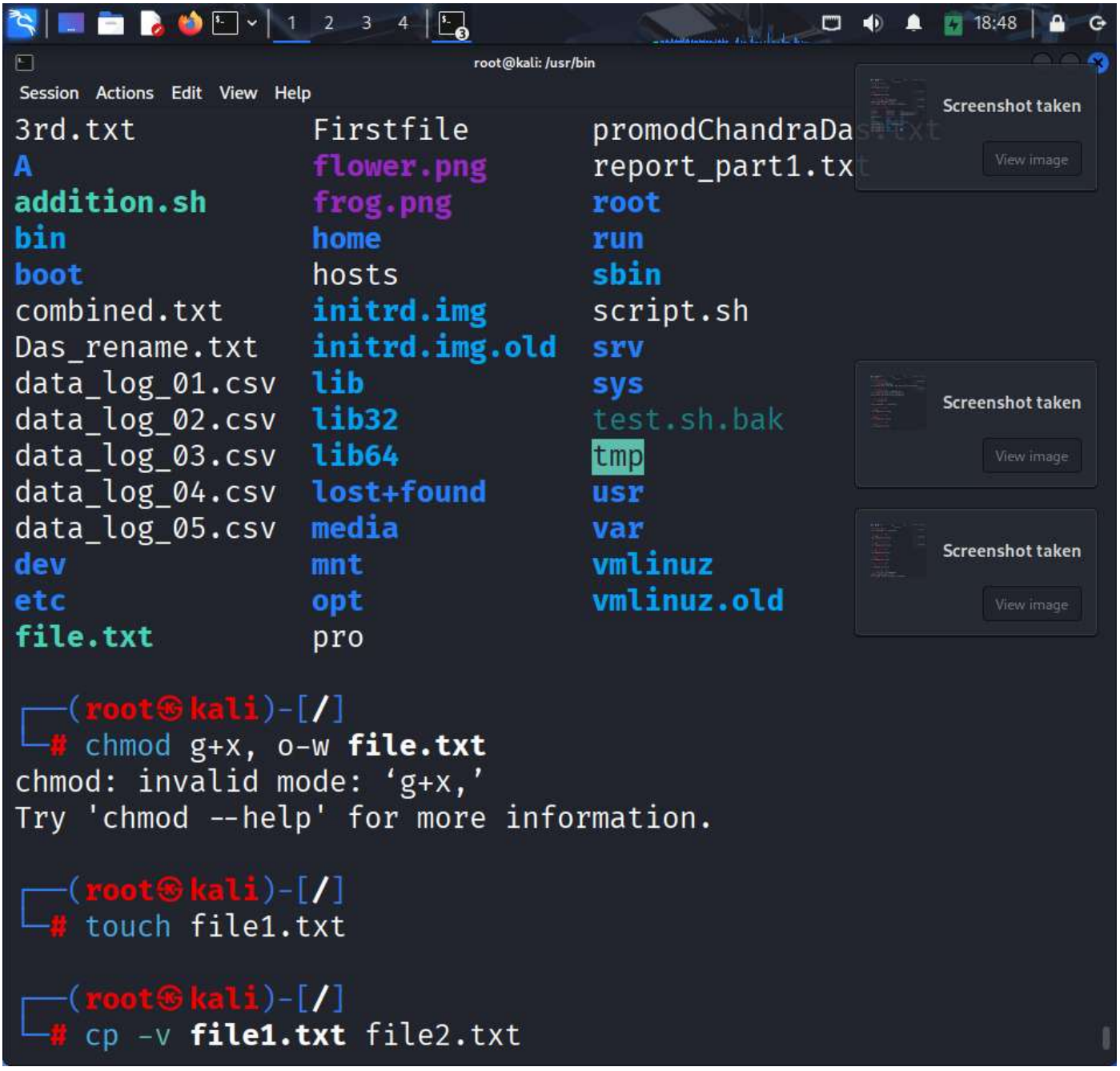
**Fiqure-32**


1 2 3 4
18:46
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
root:
┌──(root㉿kali)-[/]
└─# ls *.mp4
ls: cannot access '*.mp4': No such file or directory
┌──(root㉿kali)-[/]
└─# ls ?.txt
ls: cannot access '?.txt': No such file or directory
┌──(root㉿kali)-[/]
└─# ls *.???
1st.txt data_log_04.csv initrd.img
3rd.txt data_log_05.csv initrd.img.old
Das_rename.txt file.txt promodChandraDas.txt
data_log_01.csv filter.txt report_part1.txt
data_log_02.csv flower.png test.sh.bak
data_log_03.csv frog.png vmlinuz.old
┌──(root㉿kali)-[/]
└─# ls ?i*
file.txt filter.txt Firstfile
bin:
'['
1password2john

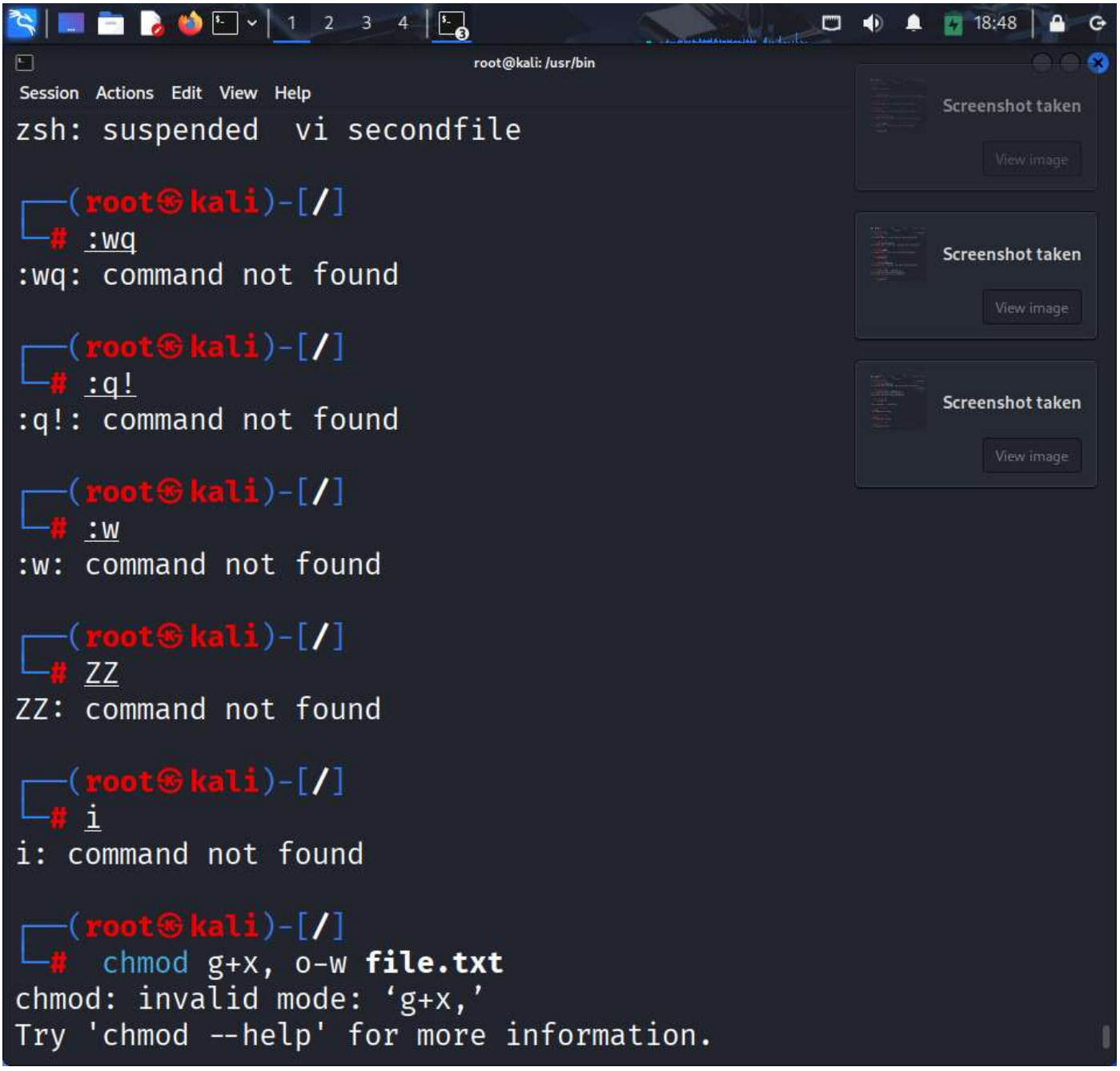
**Fiqure-33**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/]
└─# mv file.bak file.txt
mv: cannot stat 'file.bak': No such file or directory
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# cat file1 file2 > combined.txt
cat: file1: No such file or directory
cat: file2: No such file or directory
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# vi secondfile
zsh: suspended vi secondfile
┌──(root㉿kali)-[/]
└─# :wq
:wq: command not found
┌──(root㉿kali)-[/]
└─# :q!
:q!: command not found
┌──(root㉿kali)-[/]
└─# :w
:w: command not found

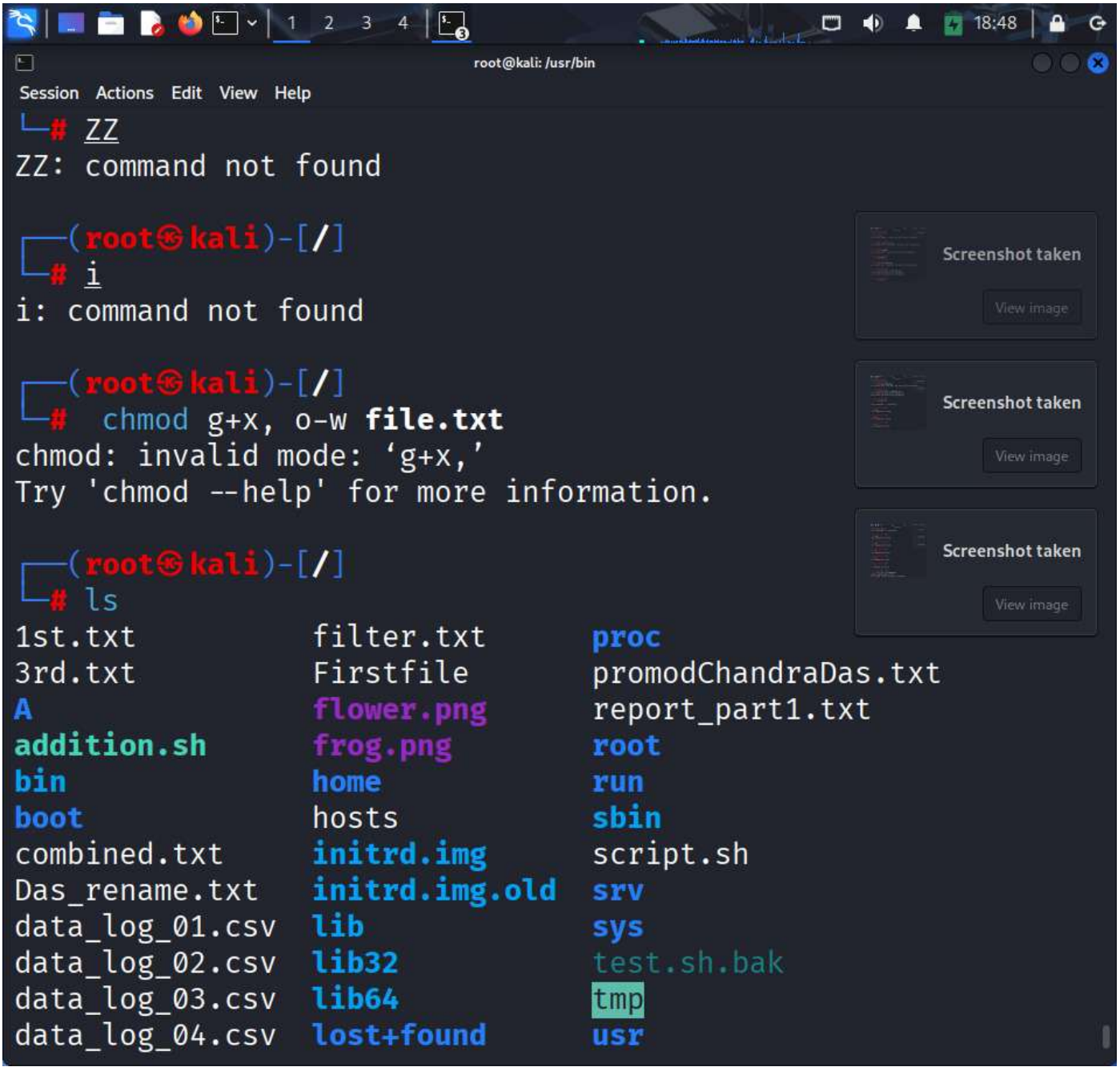
**Fiqure-34**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
3rd.txt
A
addition.sh
bin
boot
combined.txt
Das_rename.txt
data_log_01.csv
data_log_02.csv
data_log_03.csv
data_log_04.csv
data_log_05.csv
dev
etc
file.txt
Firstfile
flower.png
frog.png
home
hosts
initrd.img
initrd.img.old
lib
lib32
lib64
lost+found
media
mnt
opt
pro
promodChandraDa
report_part1.tx
root
run
sbin
script.sh
srv
sys
test.sh.bak
tmp
usr
var
vmlinuz
vmlinuz.old
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image
┌──(root㉿kali)-[/]
└─# chmod g+x, o-w file.txt
chmod: invalid mode: ‘g+x,’
Try 'chmod --help' for more information.
┌──(root㉿kali)-[/]
└─# touch file1.txt
┌──(root㉿kali)-[/]
└─# cp -v file1.txt file2.txt

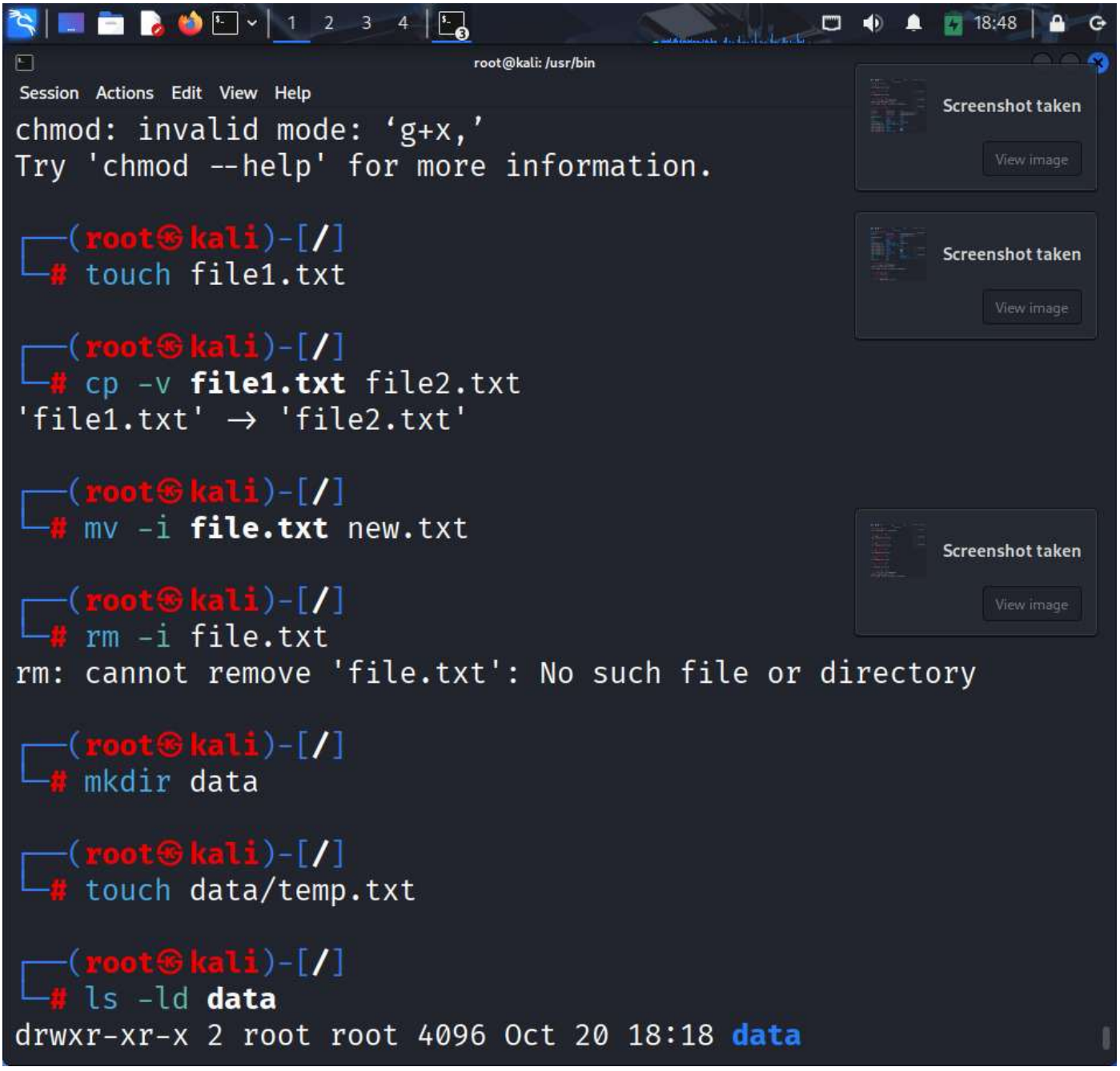
**Fiqure-35**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
zsh: suspended vi secondfile
┌──(root㉿kali)-[/]
└─# :wq
:wq: command not found
┌──(root㉿kali)-[/]
└─# :q!
:q!: command not found
┌──(root㉿kali)-[/]
└─# :w
:w: command not found
┌──(root㉿kali)-[/]
└─# ZZ
ZZ: command not found
┌──(root㉿kali)-[/]
└─# i
i: command not found
┌──(root㉿kali)-[/]
└─# chmod g+x, o-w file.txt
chmod: invalid mode: ‘g+x,’
Try 'chmod --help' for more information.
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

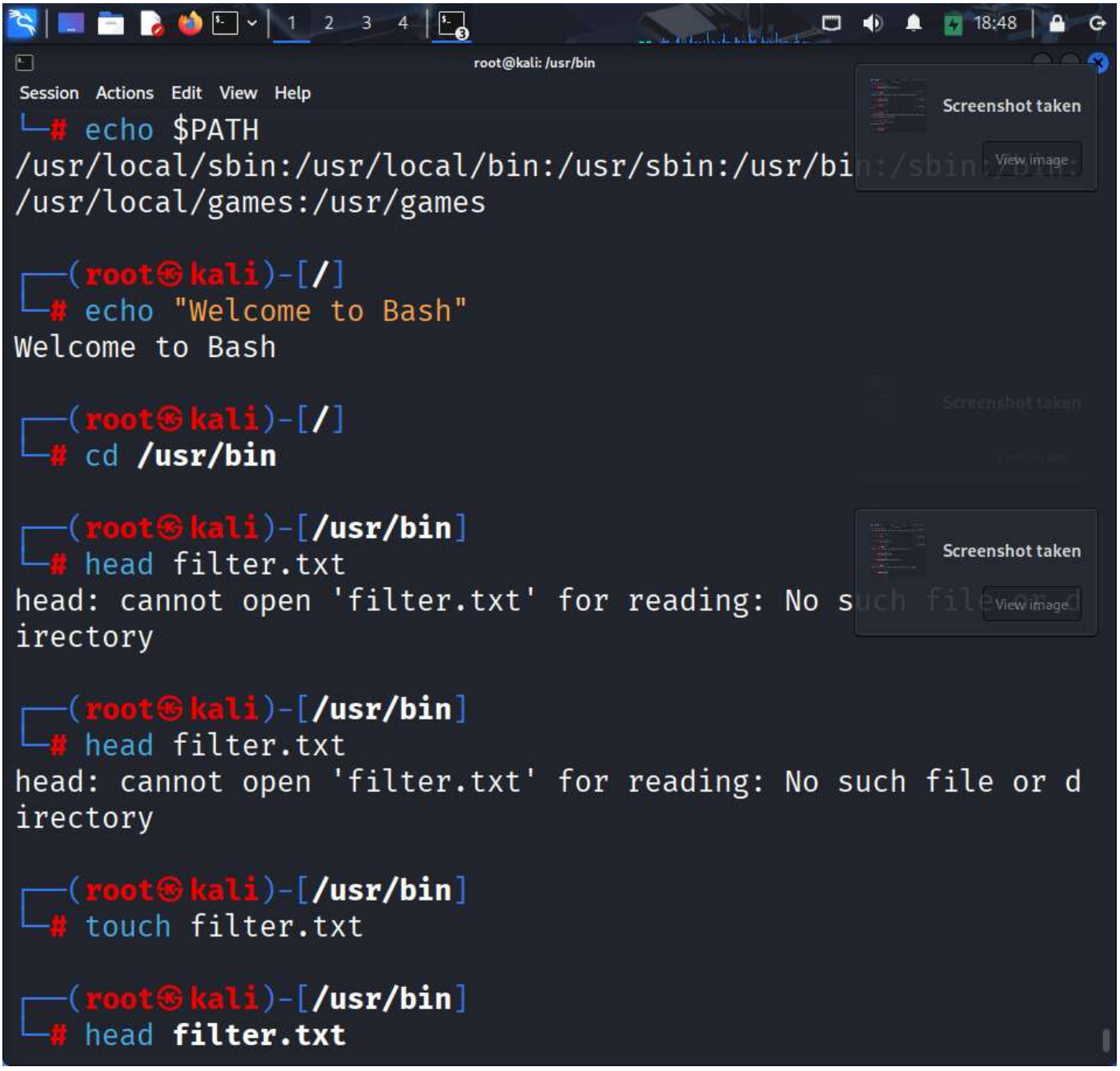
**Fiqure-36**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
└─# ZZ
ZZ: command not found
┌──(root㉿kali)-[/]
└─# i
i: command not found
┌──(root㉿kali)-[/]
└─# chmod g+x, o-w file.txt
chmod: invalid mode: ‘g+x,’
Try 'chmod --help' for more information.
┌──(root㉿kali)-[/]
└─# ls
1st.txt filter.txt proc
3rd.txt Firstfile promodChandraDas.txt
A flower.png report_part1.txt
addition.sh frog.png root
bin home run
boot hosts sbin
combined.txt initrd.img script.sh
Das_rename.txt initrd.img.old srv
data_log_01.csv lib sys
data_log_02.csv lib32 test.sh.bak
data_log_03.csv lib64 tmp
data_log_04.csv lost+found usr
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

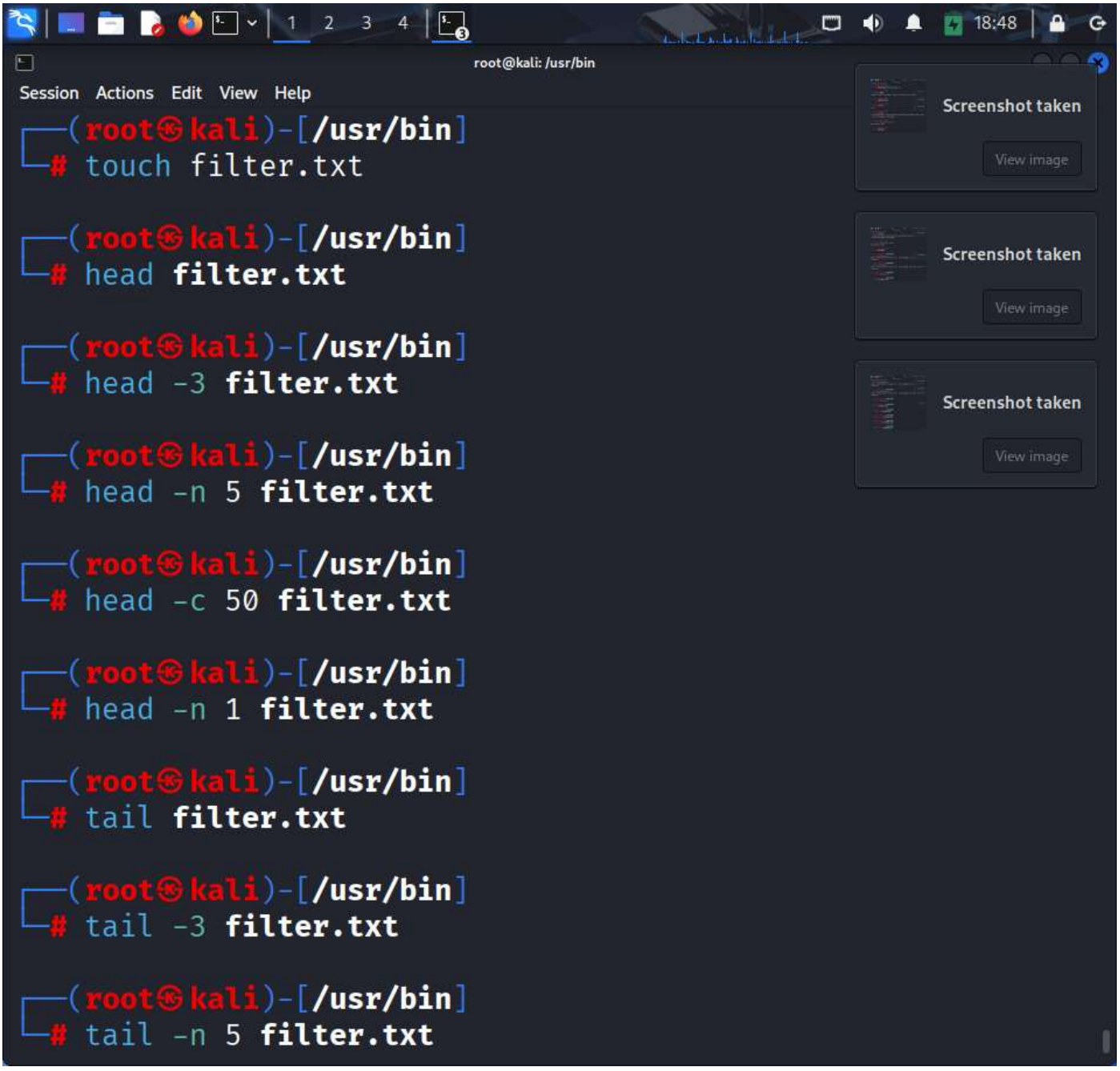
**Fiqure-37**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
chmod: invalid mode: ‘g+x,’
Try 'chmod --help' for more information.
┌──(root㉿kali)-[/]
└─# touch file1.txt
┌──(root㉿kali)-[/]
└─# cp -v file1.txt file2.txt
'file1.txt' → 'file2.txt'
┌──(root㉿kali)-[/]
└─# mv -i file.txt new.txt
┌──(root㉿kali)-[/]
└─# rm -i file.txt
rm: cannot remove 'file.txt': No such file or directory
┌──(root㉿kali)-[/]
└─# mkdir data
┌──(root㉿kali)-[/]
└─# touch data/temp.txt
┌──(root㉿kali)-[/]
└─# ls -ld data
drwxr-xr-x 2 root root 4096 Oct 20 18:18 data
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

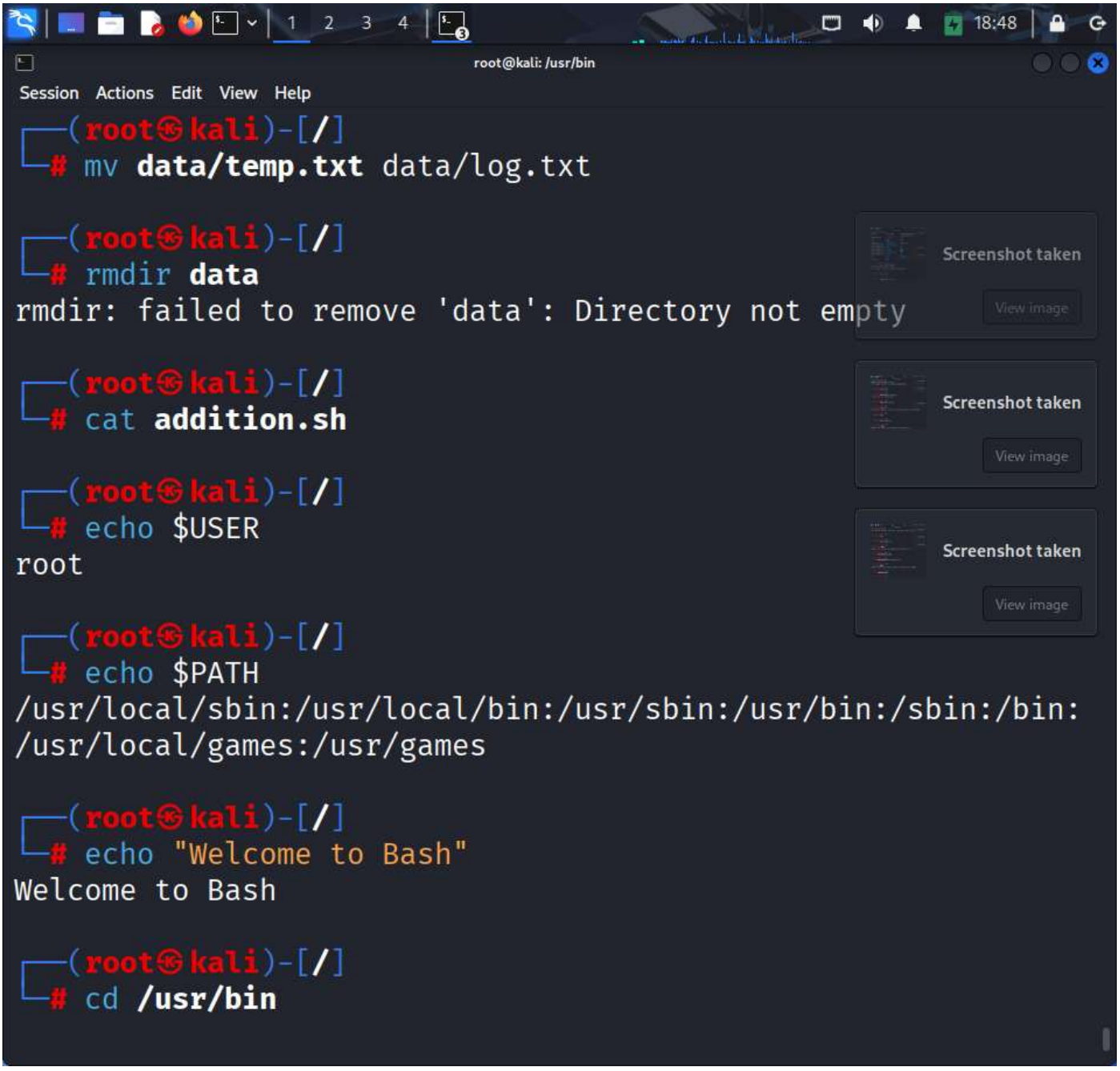
**Fiqure-38**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
Screenshot taken
View image
└─# echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bi
/usr/local/games:/usr/games
┌──(root㉿kali)-[/]
└─# echo "Welcome to Bash"
Welcome to Bash
┌──(root㉿kali)-[/]
└─# cd /usr/bin
┌──(root㉿kali)-[/usr/bin]
└─# head filter.txt
head: cannot open 'filter.txt' for reading: No s
irectory
Screenshot taken
View image
┌──(root㉿kali)-[/usr/bin]
└─# head filter.txt
head: cannot open 'filter.txt' for reading: No such file or d
irectory
┌──(root㉿kali)-[/usr/bin]
└─# touch filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head filter.txt

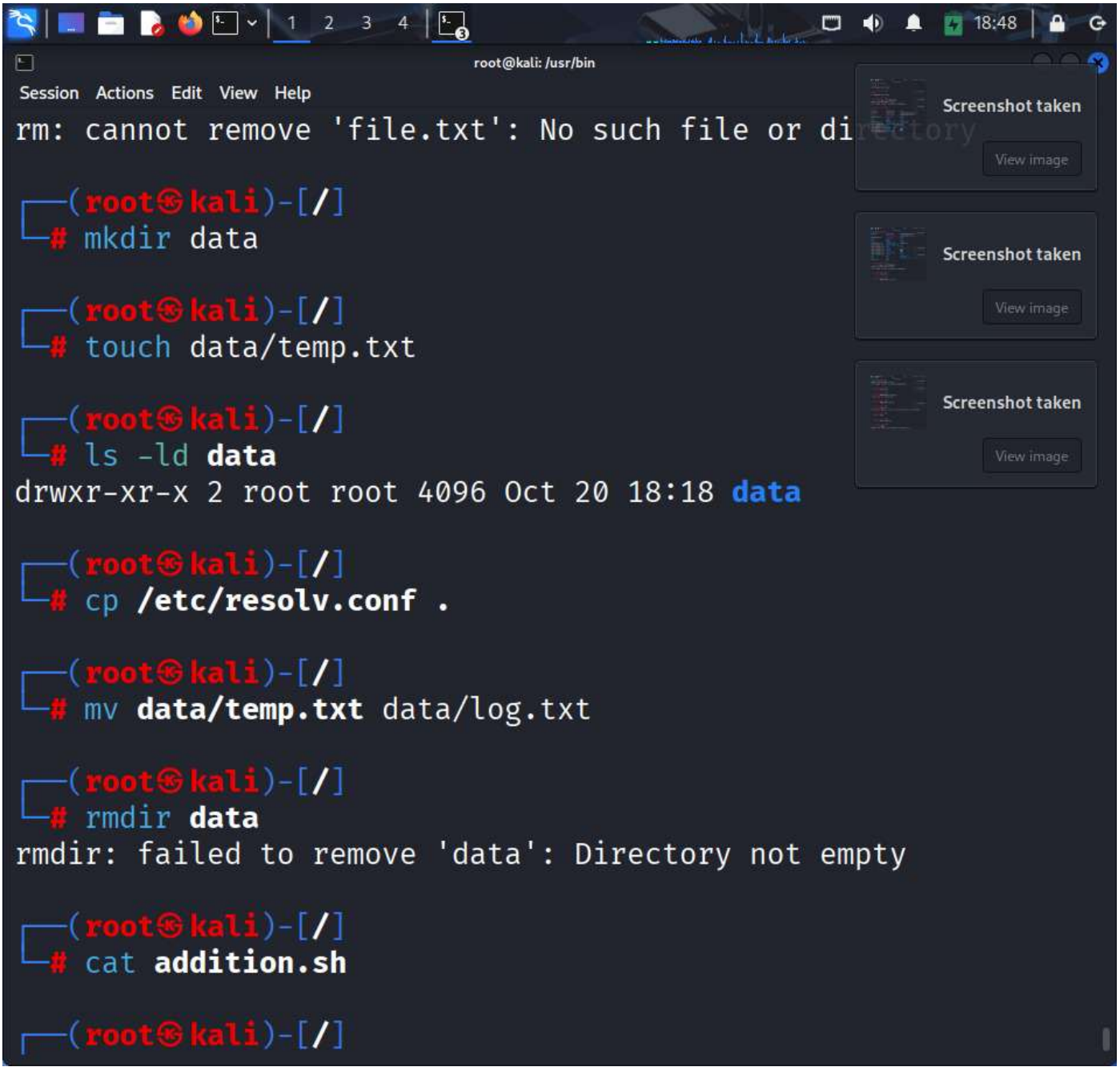
**Fiqure-39**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# touch filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -3 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -n 5 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -c 50 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -n 1 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -3 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -n 5 filter.txt
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

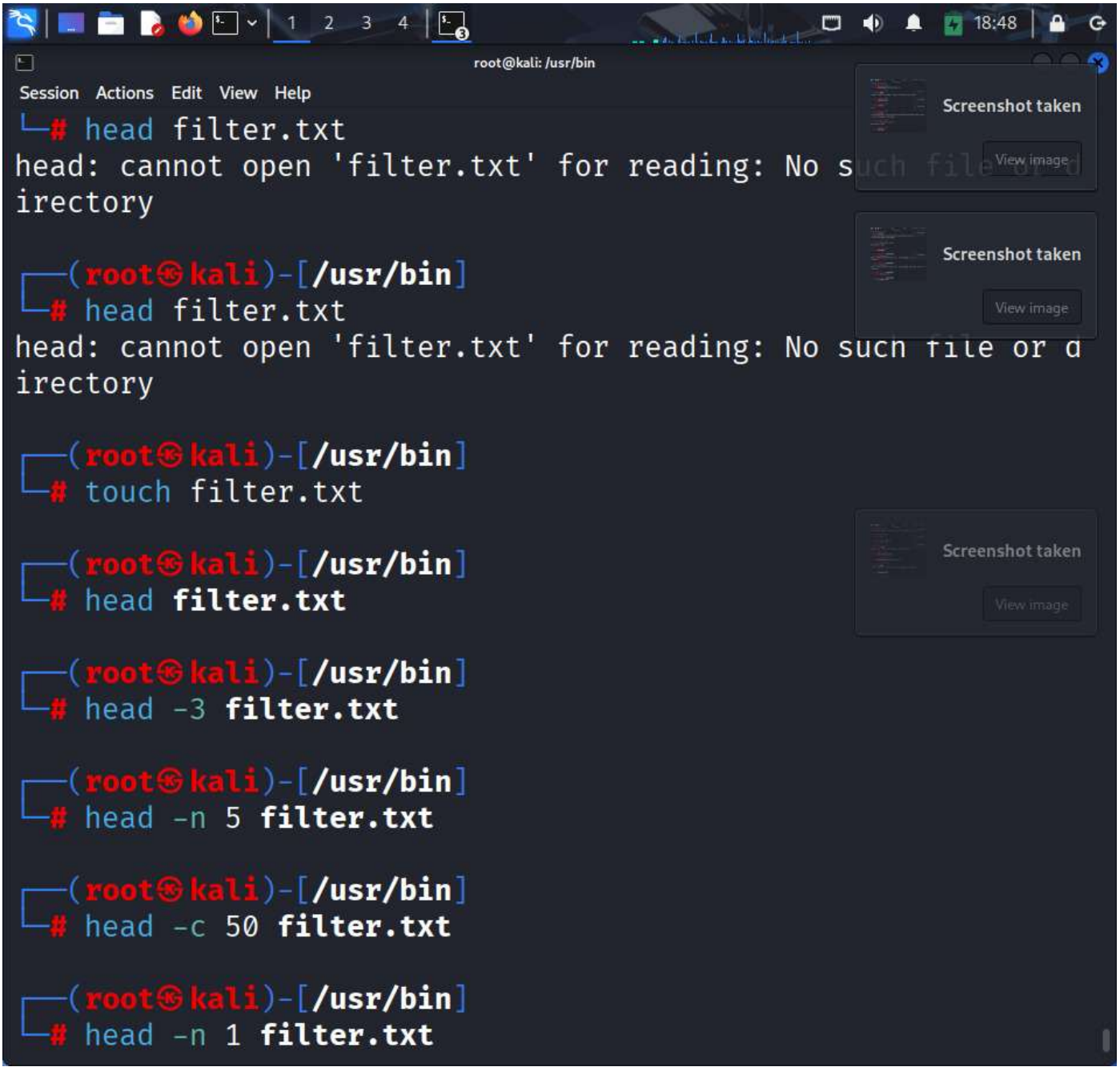
**Fiqure-40**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/]
└─# mv data/temp.txt data/log.txt
┌──(root㉿kali)-[/]
└─# rmdir data
rmdir: failed to remove 'data': Directory not empty
┌──(root㉿kali)-[/]
└─# cat addition.sh
┌──(root㉿kali)-[/]
└─# echo $USER
root
┌──(root㉿kali)-[/]
└─# echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:
/usr/local/games:/usr/games
┌──(root㉿kali)-[/]
└─# echo "Welcome to Bash"
Welcome to Bash
┌──(root㉿kali)-[/]
└─# cd /usr/bin
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

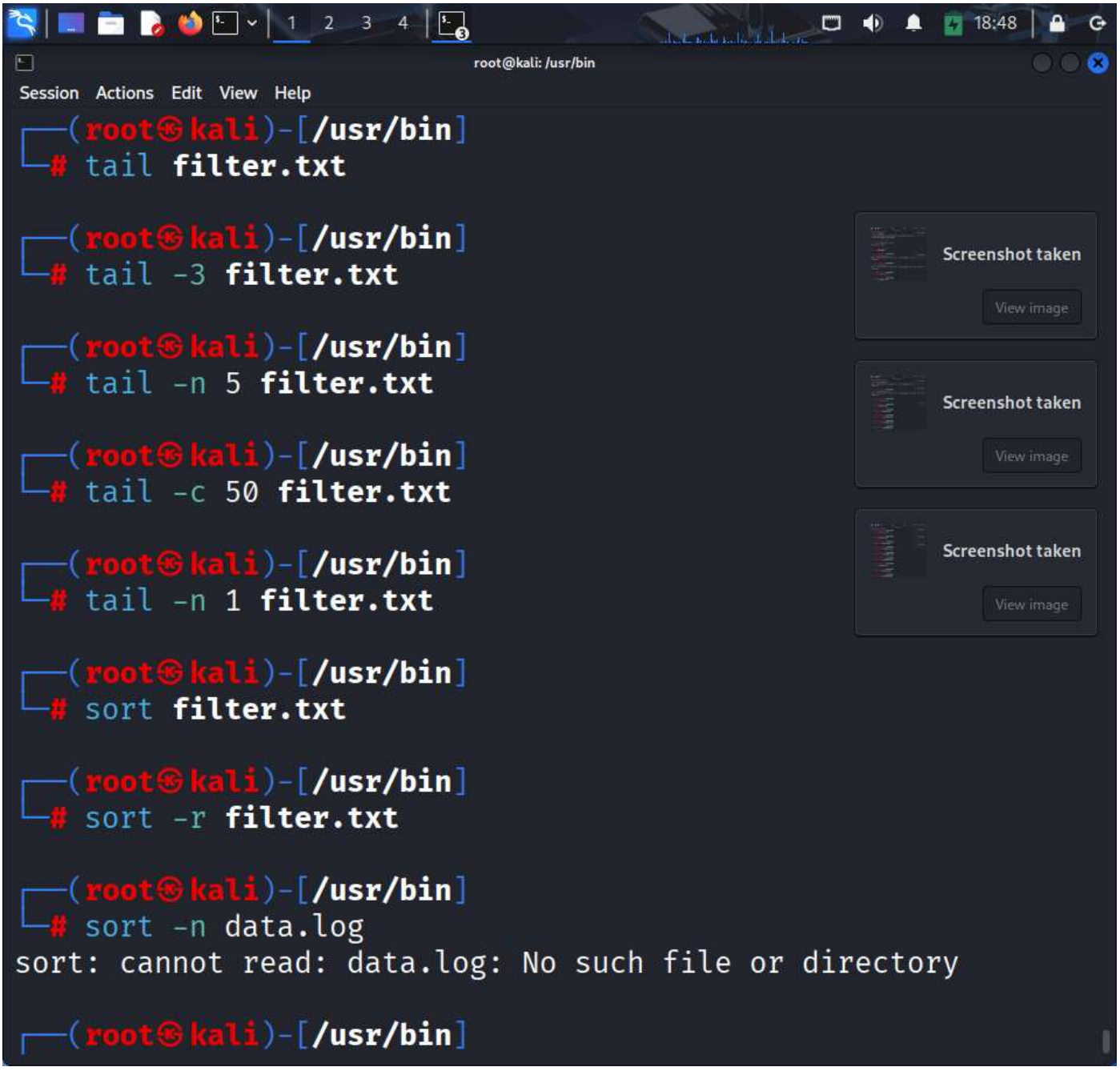
**Fiqure-41**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
rm: cannot remove 'file.txt': No such file or directory
(root㉿kali)-[/]
# mkdir data
(root㉿kali)-[/]
# touch data/temp.txt
(root㉿kali)-[/]
# ls -ld data
drwxr-xr-x 2 root root 4096 Oct 20 18:18 data
(root㉿kali)-[/]
# cp /etc/resolv.conf .
(root㉿kali)-[/]
# mv data/temp.txt data/log.txt
(root㉿kali)-[/]
# rmdir data
rmdir: failed to remove 'data': Directory not empty
(root㉿kali)-[/]
# cat addition.sh
(root㉿kali)-[/]
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

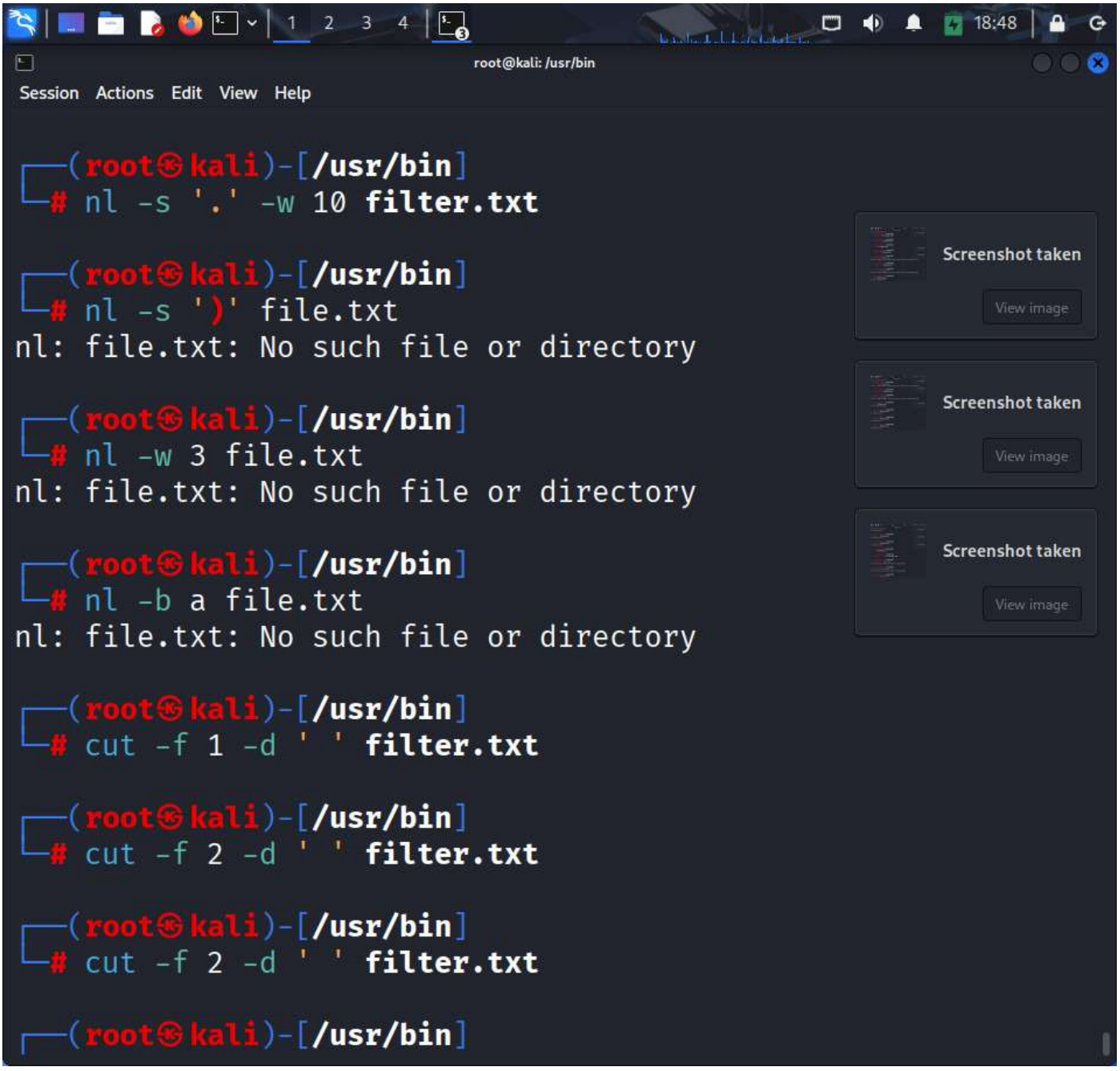
**Fiqure-42**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
└─# head filter.txt
head: cannot open 'filter.txt' for reading: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# head filter.txt
head: cannot open 'filter.txt' for reading: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# touch filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -3 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -n 5 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -c 50 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# head -n 1 filter.txt
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

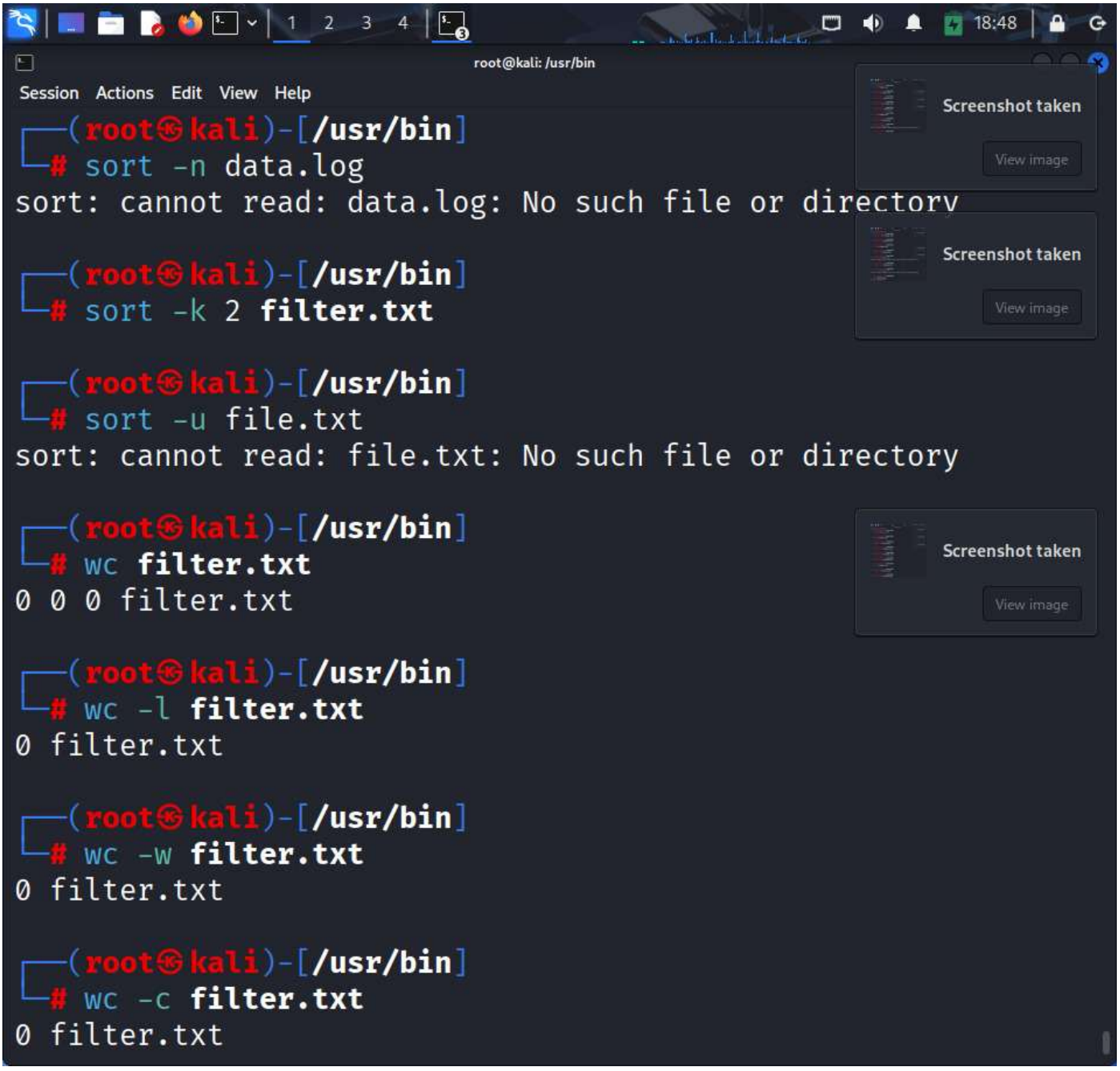
**Fiqure-43**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# tail filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -3 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -n 5 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -c 50 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -n 1 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort -r filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort -n data.log
sort: cannot read: data.log: No such file or directory
┌──(root㉿kali)-[/usr/bin]
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

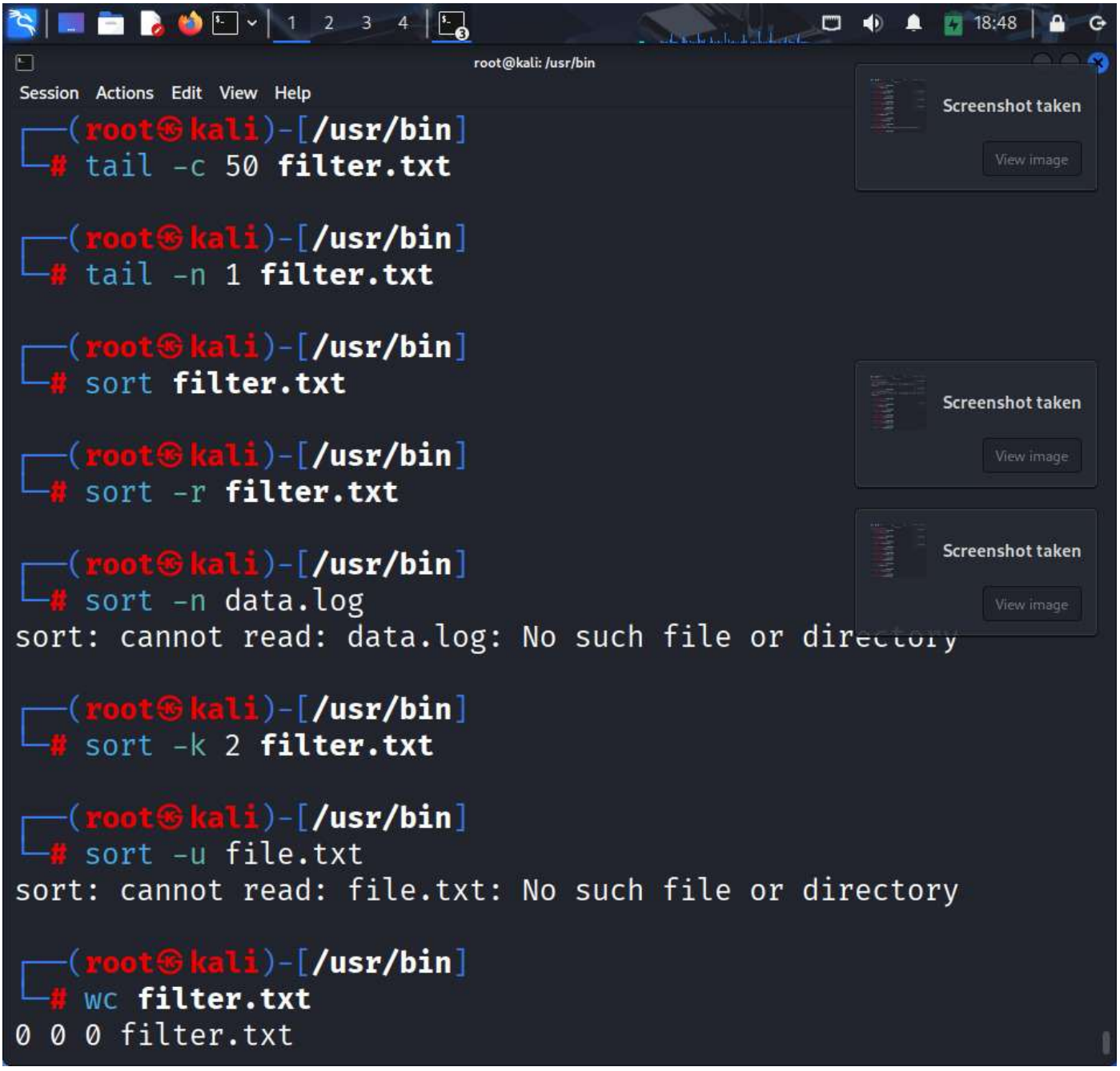
**Fiqure-44**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# nl -s '.' -w 10 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# nl -s ')' file.txt
nl: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# nl -w 3 file.txt
nl: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# nl -b a file.txt
nl: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# cut -f 1 -d ' ' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# cut -f 2 -d ' ' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# cut -f 2 -d ' ' filter.txt
┌──(root㉿kali)-[/usr/bin]
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

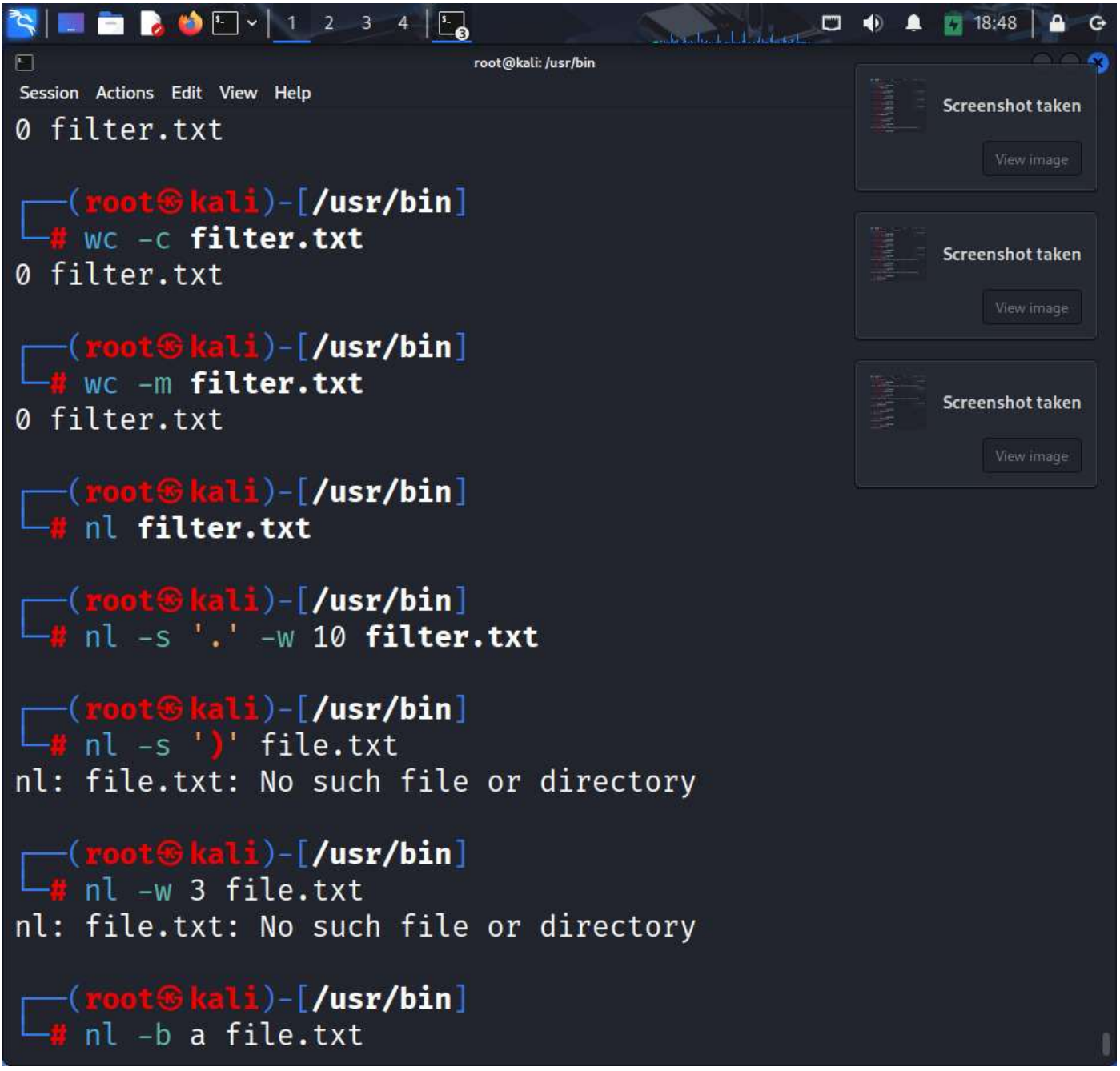
**Fiqure-45**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
(root㉿kali)-[/usr/bin]
# sort -n data.log
sort: cannot read: data.log: No such file or directory
(root㉿kali)-[/usr/bin]
# sort -k 2 filter.txt
(root㉿kali)-[/usr/bin]
# sort -u file.txt
sort: cannot read: file.txt: No such file or directory
(root㉿kali)-[/usr/bin]
# wc filter.txt
0 0 0 filter.txt
(root㉿kali)-[/usr/bin]
# wc -l filter.txt
0 filter.txt
(root㉿kali)-[/usr/bin]
# wc -w filter.txt
0 filter.txt
(root㉿kali)-[/usr/bin]
# wc -c filter.txt
0 filter.txt
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

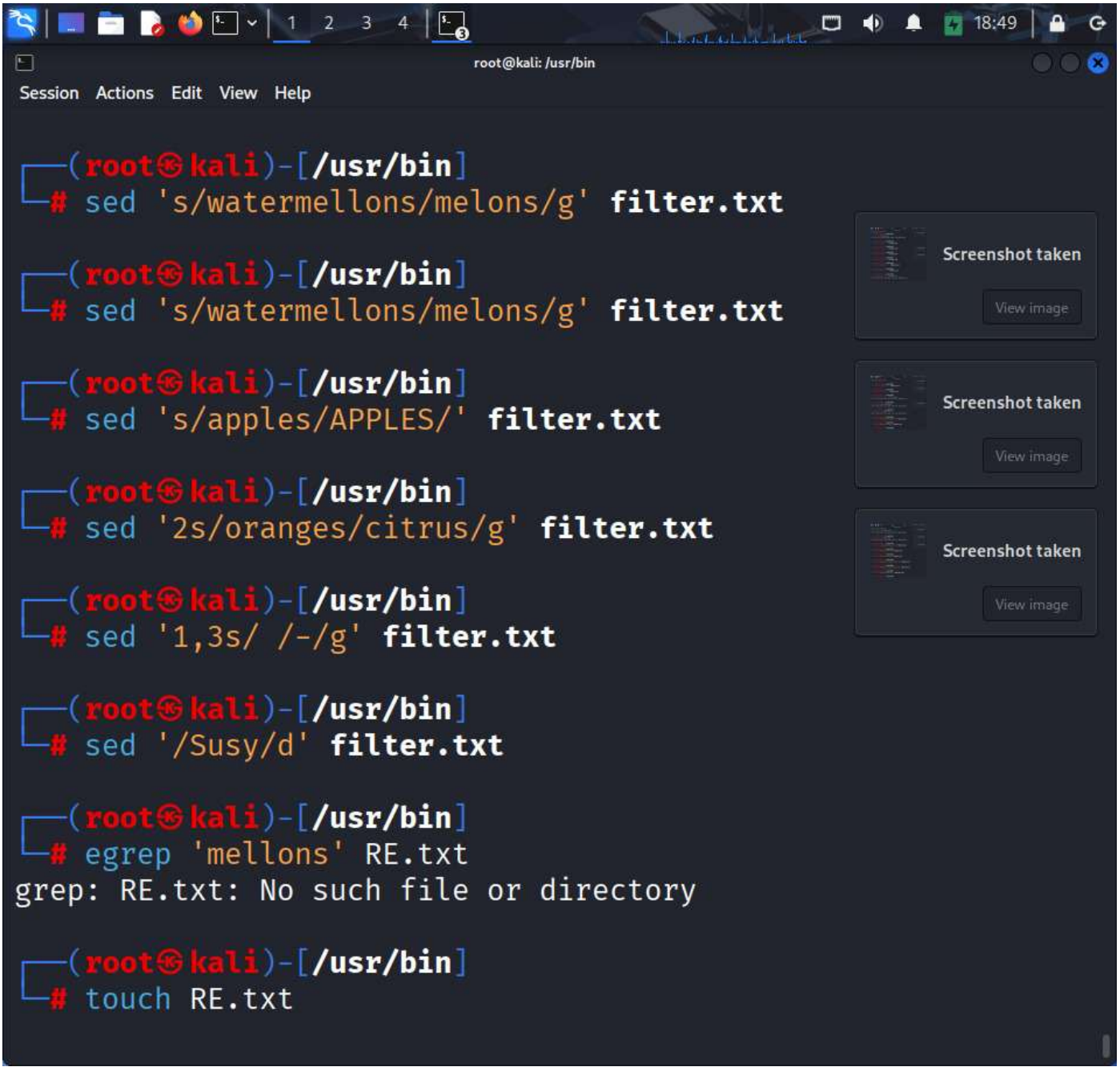
**Fiqure-46**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# tail -c 50 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# tail -n 1 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort -r filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort -n data.log
sort: cannot read: data.log: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# sort -k 2 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sort -u file.txt
sort: cannot read: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# wc filter.txt
0 0 0 filter.txt
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

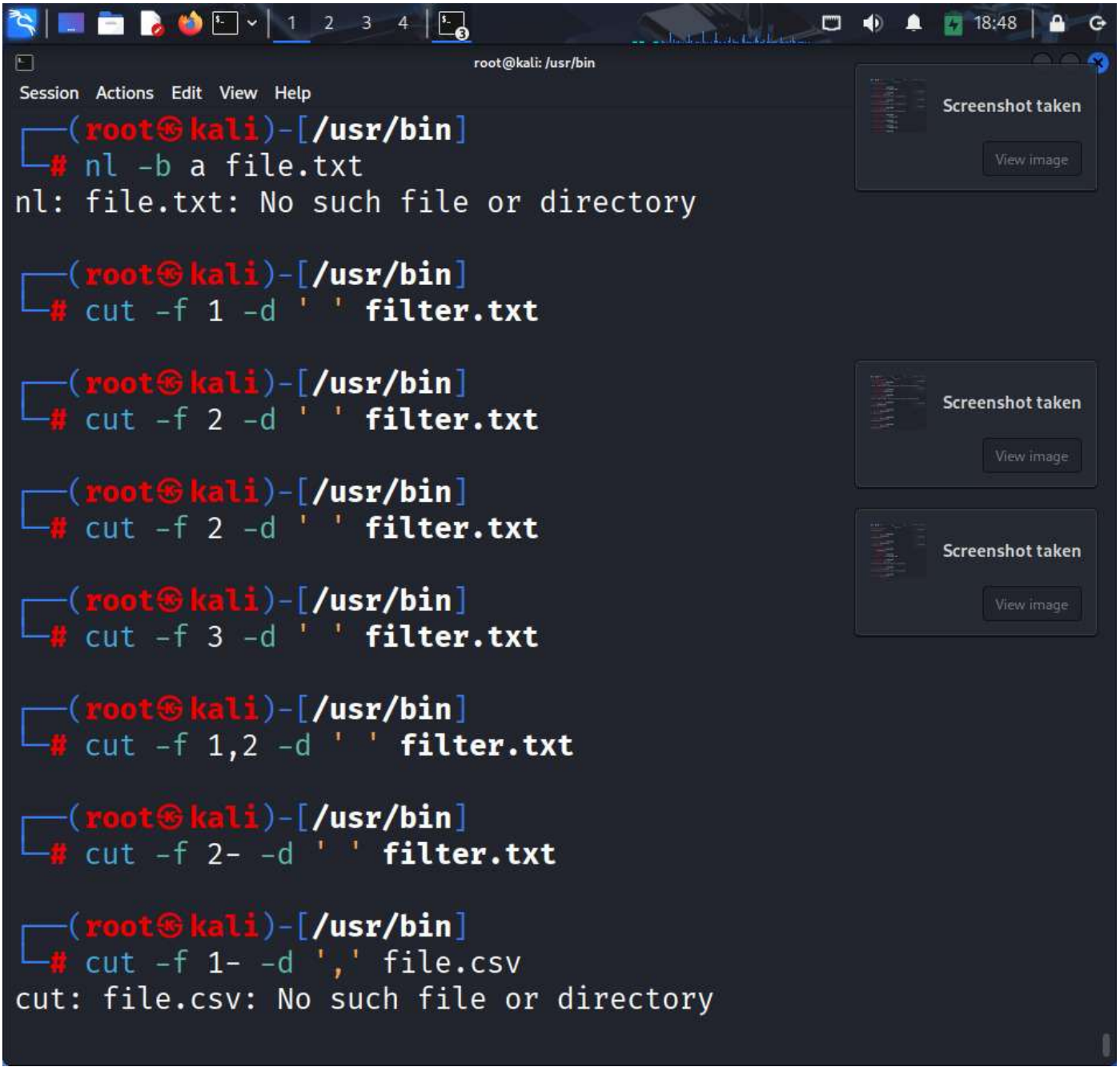
**Fiqure-47**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
0 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# wc -c filter.txt
0 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# wc -m filter.txt
0 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# nl filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# nl -s '.' -w 10 filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# nl -s ')' file.txt
nl: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# nl -w 3 file.txt
nl: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# nl -b a file.txt
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

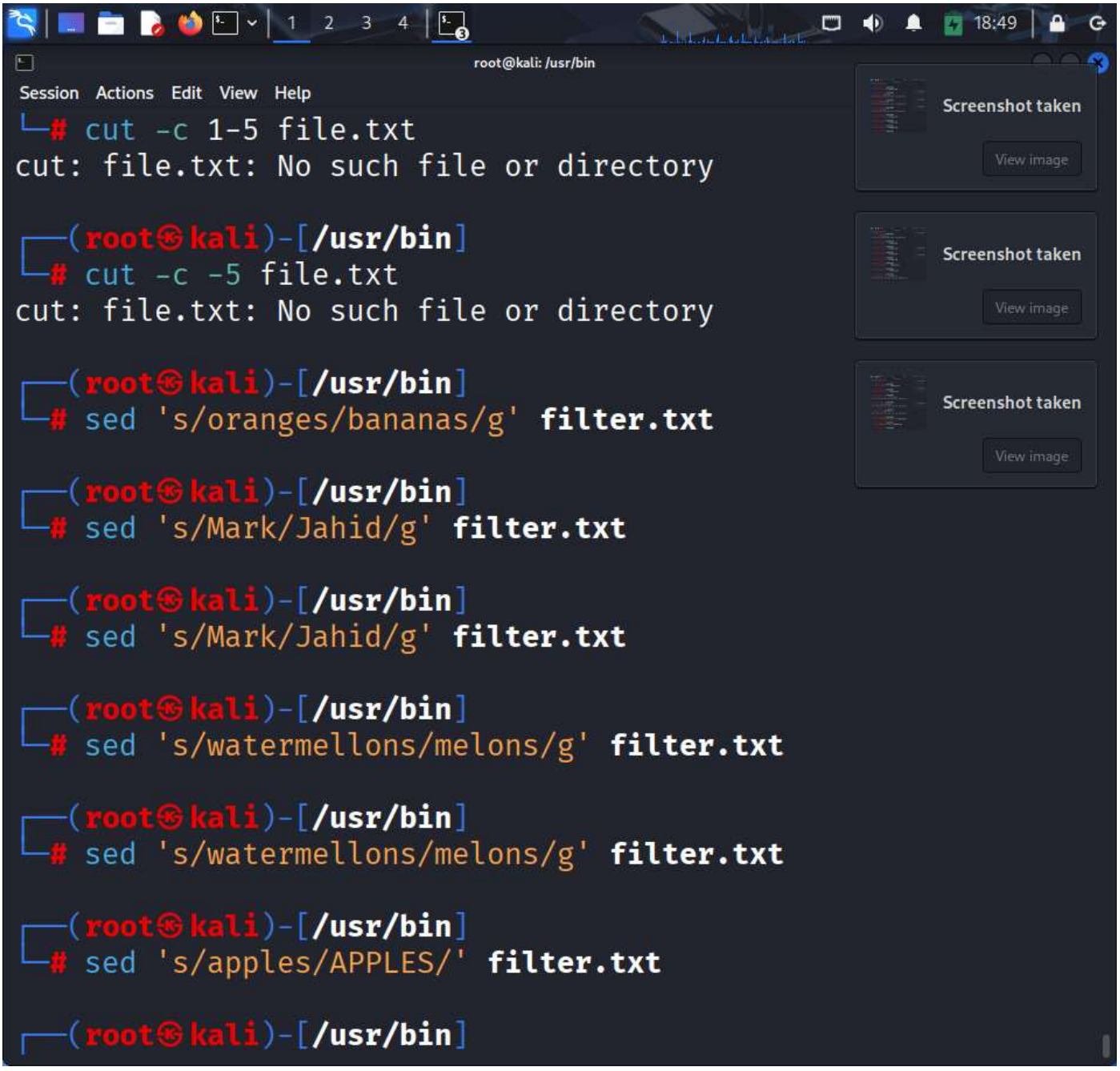
**Fiqure-48**


1 2 3 4
18:49
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/watermellons/melons/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/watermellons/melons/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/apples/APPLES/' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed '2s/oranges/citrus/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed '1,3s/ /-/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed '/Susy/d' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# egrep 'mellons' RE.txt
grep: RE.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# touch RE.txt
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

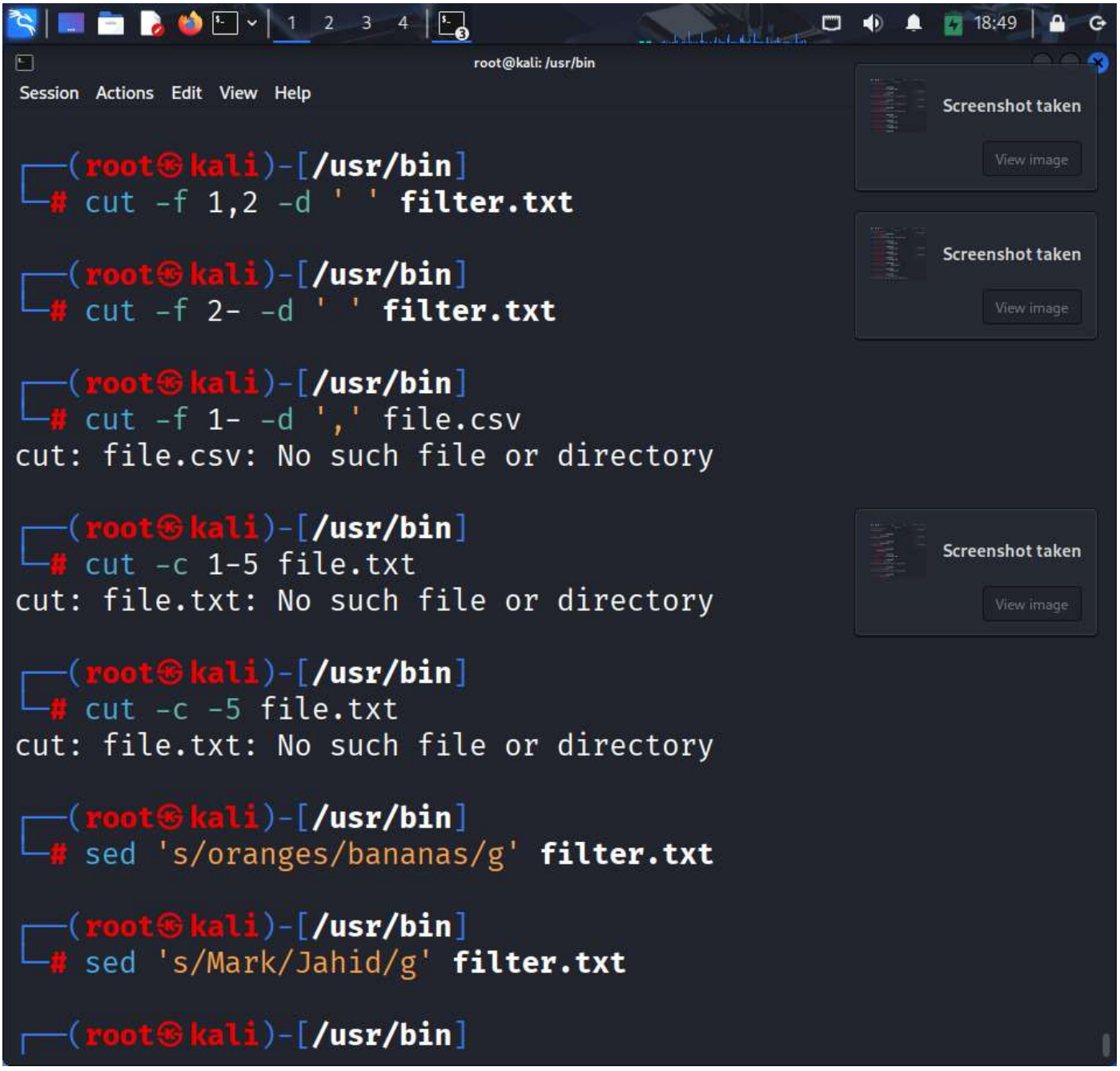
**Fiqure-49**


1 2 3 4
18:48
root@kali: /usr/bin
Session Actions Edit View Help
(root㉿kali)-[/usr/bin]
# nl -b a file.txt
nl: file.txt: No such file or directory
(root㉿kali)-[/usr/bin]
# cut -f 1 -d ' ' filter.txt
(root㉿kali)-[/usr/bin]
# cut -f 2 -d ' ' filter.txt
(root㉿kali)-[/usr/bin]
# cut -f 2 -d ' ' filter.txt
(root㉿kali)-[/usr/bin]
# cut -f 3 -d ' ' filter.txt
(root㉿kali)-[/usr/bin]
# cut -f 1,2 -d ' ' filter.txt
(root㉿kali)-[/usr/bin]
# cut -f 2- -d ' ' filter.txt
(root㉿kali)-[/usr/bin]
# cut -f 1- -d ',' file.csv
cut: file.csv: No such file or directory
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

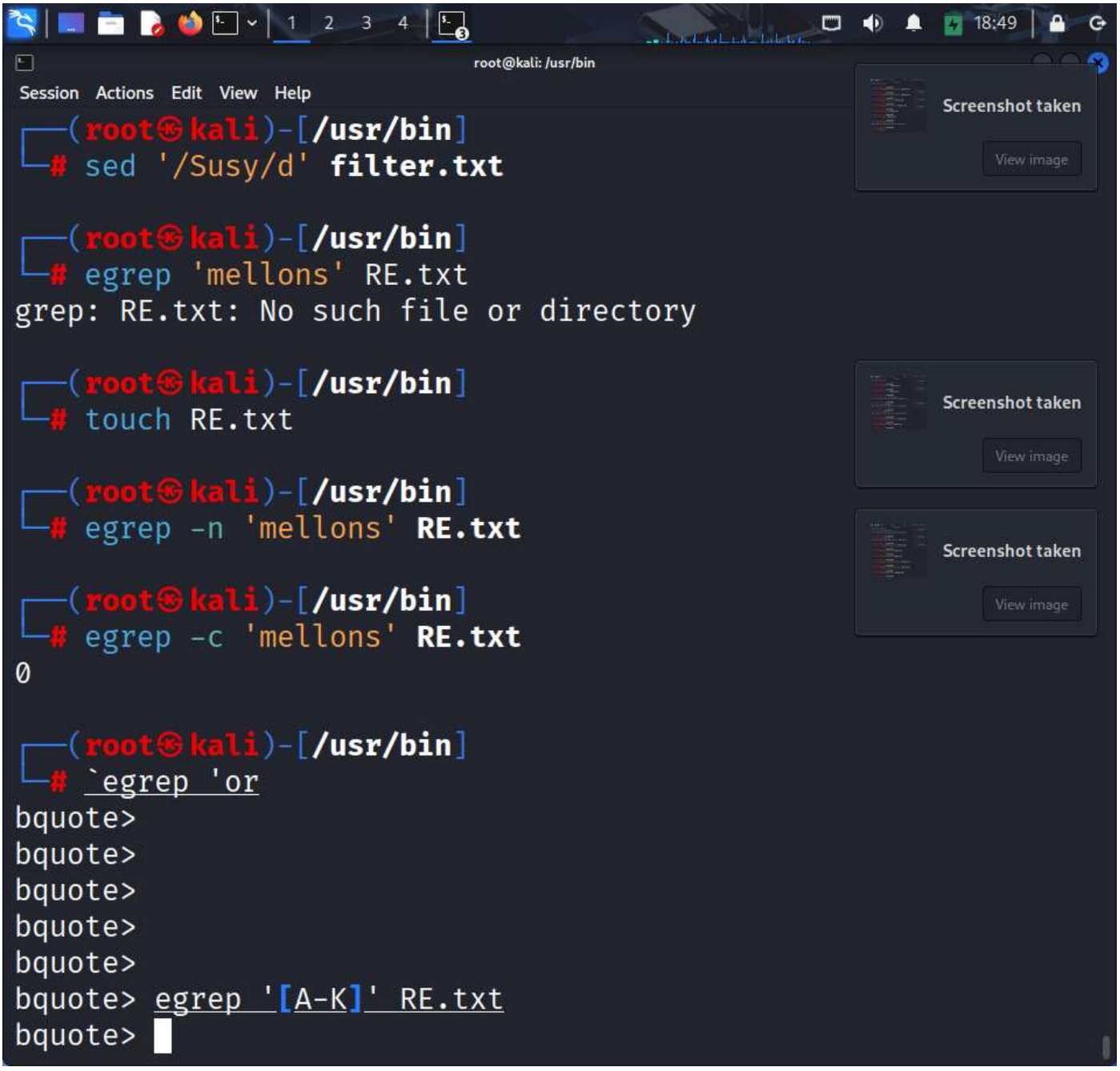
**Fiqure-50**


1 2 3 4
18:49
root@kali: /usr/bin
Session Actions Edit View Help
└─# cut -c 1-5 file.txt
cut: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# cut -c -5 file.txt
cut: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/oranges/bananas/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/Mark/Jahid/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/Mark/Jahid/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/watermellons/melons/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/watermellons/melons/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/apples/APPLES/' filter.txt
┌──(root㉿kali)-[/usr/bin]
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

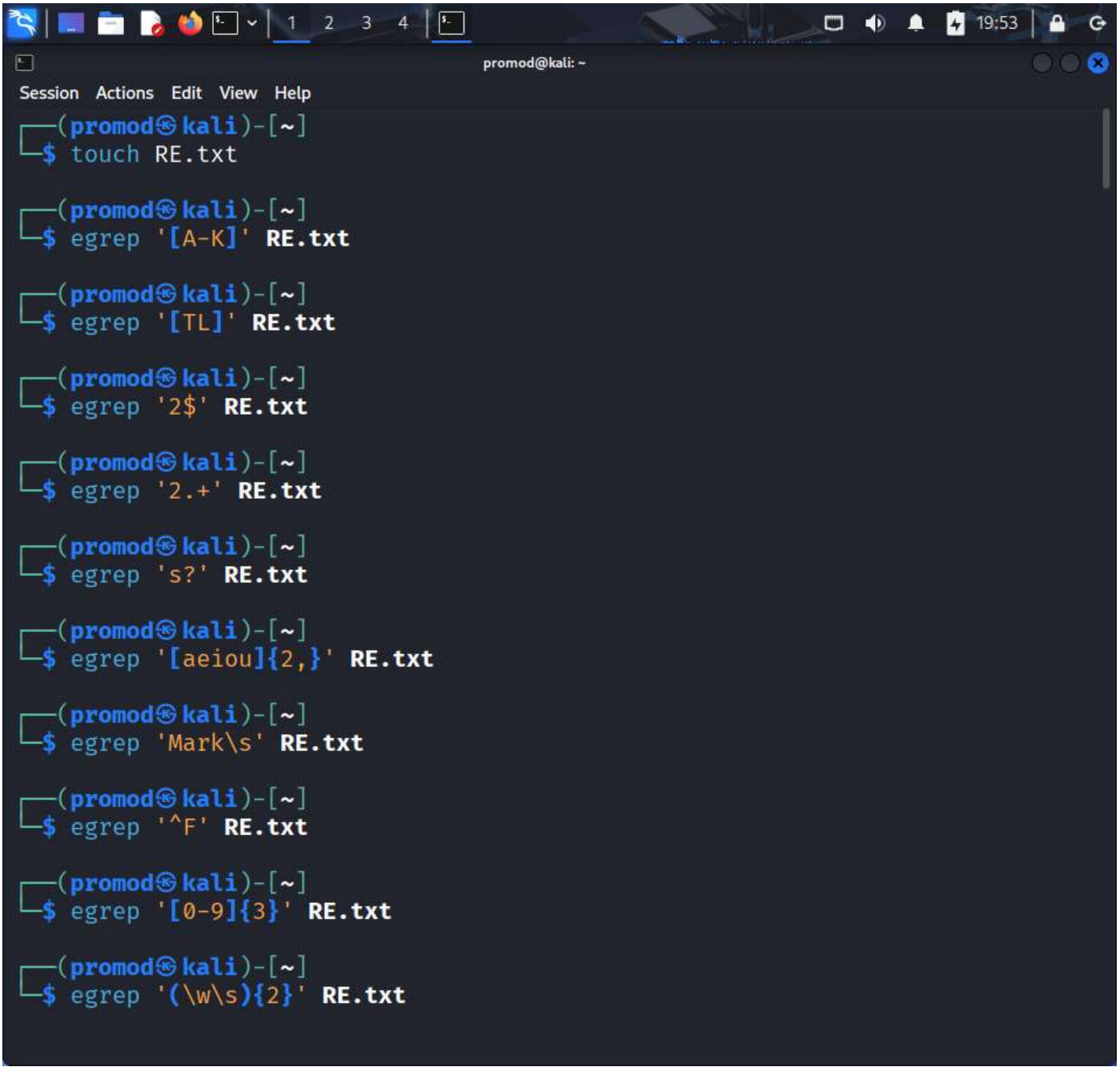
**Fiqure-51**


1 2 3 4
18:49
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# cut -f 1,2 -d ' ' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# cut -f 2- -d ' ' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# cut -f 1- -d ',' file.csv
cut: file.csv: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# cut -c 1-5 file.txt
cut: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# cut -c -5 file.txt
cut: file.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/oranges/bananas/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# sed 's/Mark/Jahid/g' filter.txt
┌──(root㉿kali)-[/usr/bin]
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

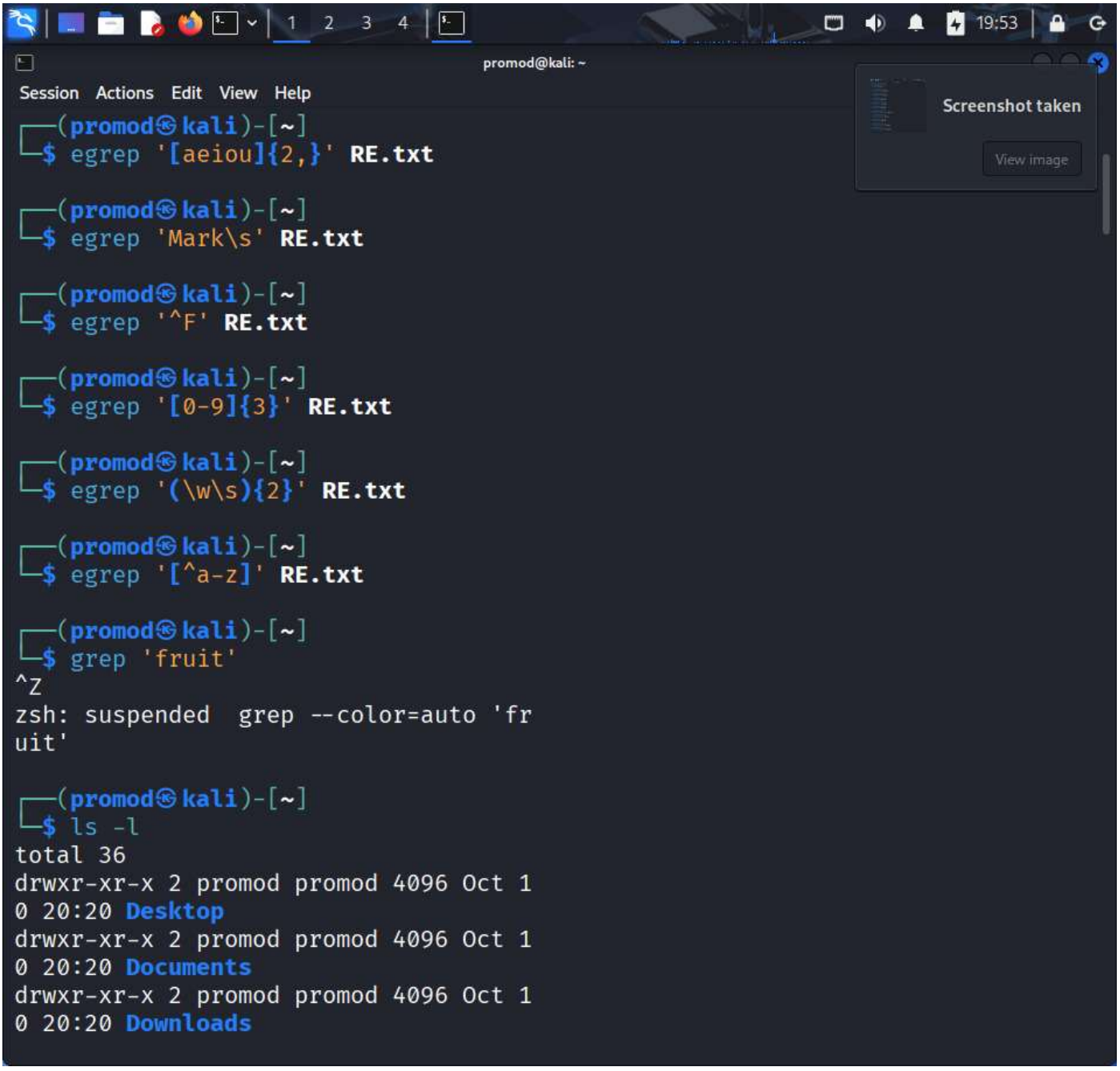
**Fiqure-52**


1 2 3 4
18:49
root@kali: /usr/bin
Session Actions Edit View Help
┌──(root㉿kali)-[/usr/bin]
└─# sed '/Susy/d' filter.txt
┌──(root㉿kali)-[/usr/bin]
└─# egrep 'mellons' RE.txt
grep: RE.txt: No such file or directory
┌──(root㉿kali)-[/usr/bin]
└─# touch RE.txt
┌──(root㉿kali)-[/usr/bin]
└─# egrep -n 'mellons' RE.txt
┌──(root㉿kali)-[/usr/bin]
└─# egrep -c 'mellons' RE.txt
0
┌──(root㉿kali)-[/usr/bin]
└─# `egrep 'or
bquote>
bquote>
bquote>
bquote>
bquote>
bquote> egrep '[A-K]' RE.txt
bquote>
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

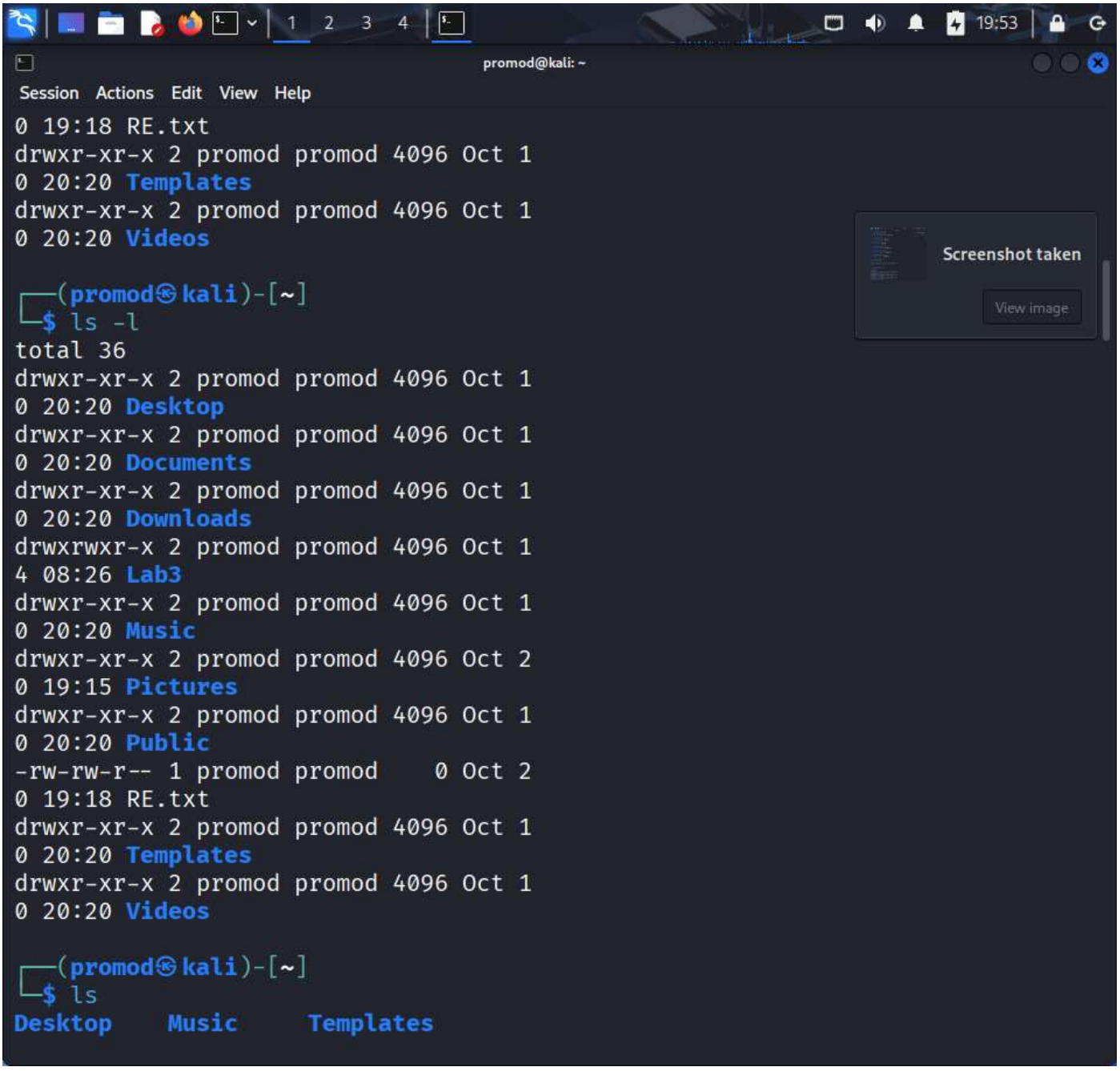
**Fiqure-52**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
(promod㉿kali)-[~]
$ touch RE.txt
(promod㉿kali)-[~]
$ egrep '[A-K]' RE.txt
(promod㉿kali)-[~]
$ egrep '[TL]' RE.txt
(promod㉿kali)-[~]
$ egrep '2$' RE.txt
(promod㉿kali)-[~]
$ egrep '2.+' RE.txt
(promod㉿kali)-[~]
$ egrep 's?' RE.txt
(promod㉿kali)-[~]
$ egrep '[aeiou]{2,}' RE.txt
(promod㉿kali)-[~]
$ egrep 'Mark\s' RE.txt
(promod㉿kali)-[~]
$ egrep '^F' RE.txt
(promod㉿kali)-[~]
$ egrep '[0-9]{3}' RE.txt
(promod㉿kali)-[~]
$ egrep '(\w\s){2}' RE.txt

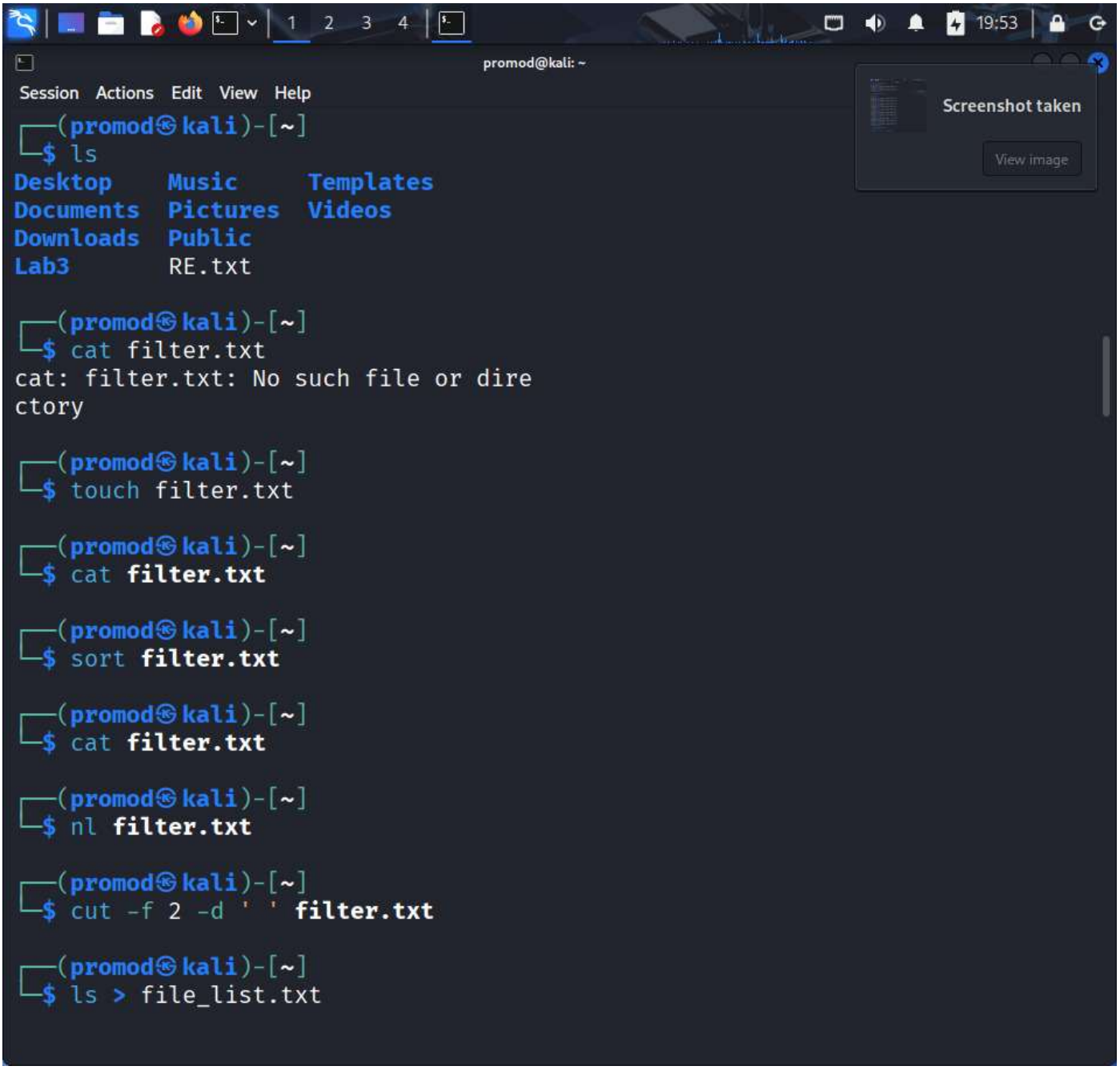
**Fiqure-53**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
┌──(promod㉿kali)-[~]
└─$ egrep '[aeiou]{2,}' RE.txt
┌──(promod㉿kali)-[~]
└─$ egrep 'Mark\s' RE.txt
┌──(promod㉿kali)-[~]
└─$ egrep '^F' RE.txt
┌──(promod㉿kali)-[~]
└─$ egrep '[0-9]{3}' RE.txt
┌──(promod㉿kali)-[~]
└─$ egrep '(\w\s){2}' RE.txt
┌──(promod㉿kali)-[~]
└─$ egrep '[^a-z]' RE.txt
┌──(promod㉿kali)-[~]
└─$ grep 'fruit'
^Z
zsh: suspended grep --color=auto 'fr
uit'
┌──(promod㉿kali)-[~]
└─$ ls -l
total 36
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Desktop
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Documents
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Downloads

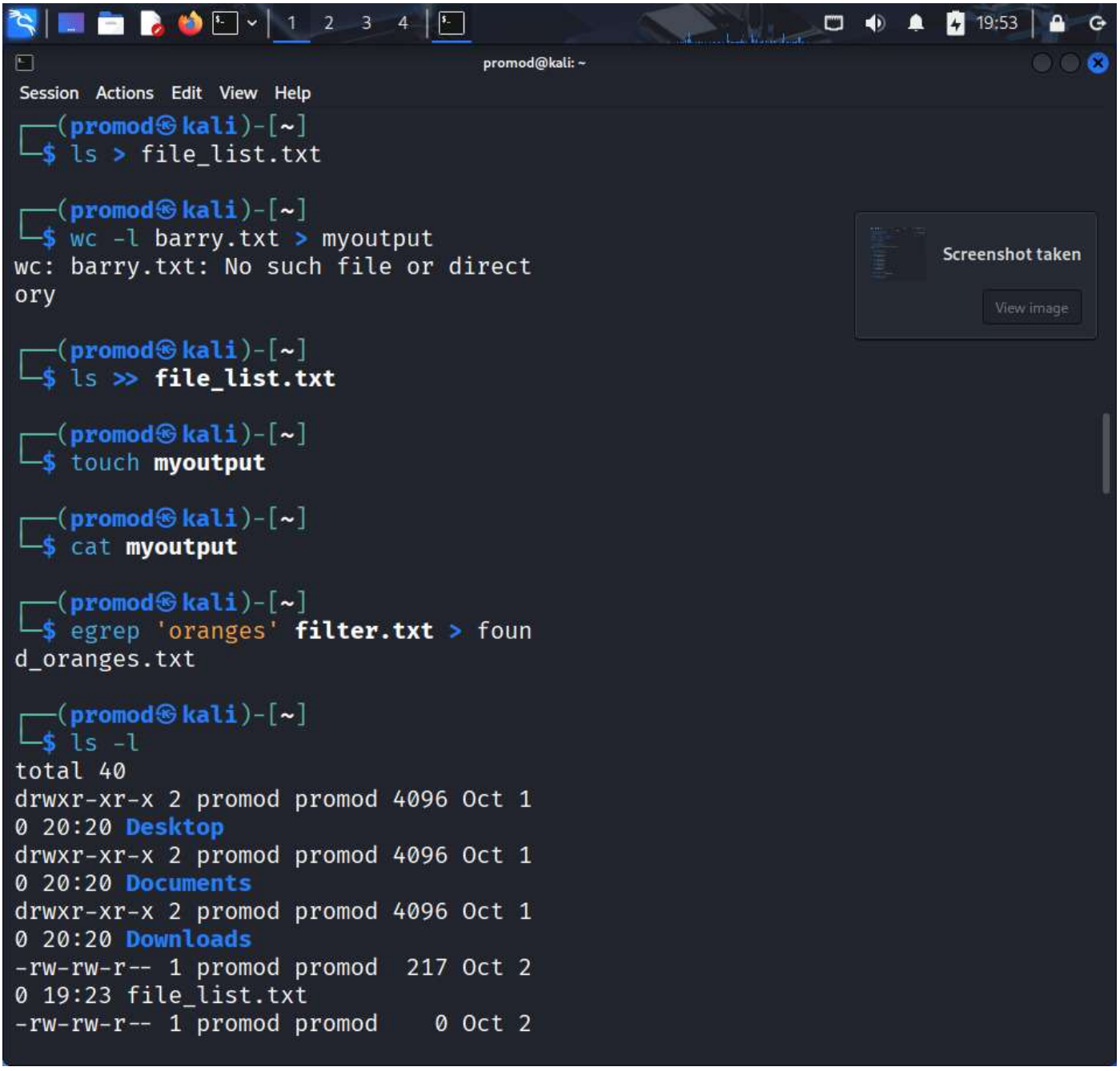
**Fiqure-54**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
0 19:18 RE.txt
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Templates
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Videos
Screenshot taken
View image
(promod㉿kali)-[~]
$ ls -l
total 36
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Desktop
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Documents
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Downloads
drwxrwxr-x 2 promod promod 4096 Oct 1
4 08:26 Lab3
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Music
drwxr-xr-x 2 promod promod 4096 Oct 2
0 19:15 Pictures
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Public
-rw-rw-r-- 1 promod promod 0 Oct 2
0 19:18 RE.txt
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Templates
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Videos
(promod㉿kali)-[~]
$ ls
Desktop Music Templates

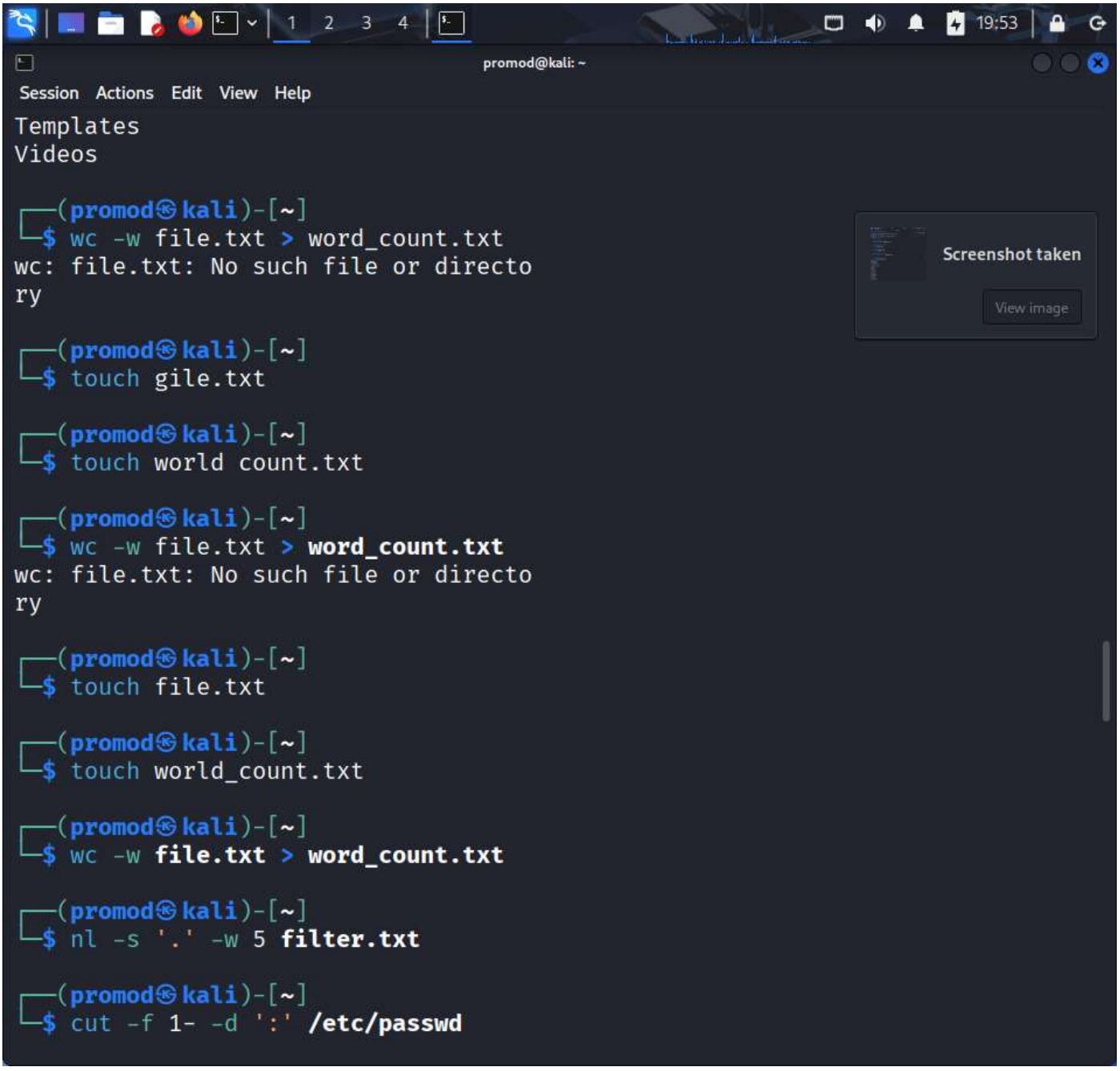
**Fiqure-55**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
(promod㉿kali)-[~]
$ ls
Desktop Music Templates
Documents Pictures Videos
Downloads Public
Lab3 RE.txt
(promod㉿kali)-[~]
$ cat filter.txt
cat: filter.txt: No such file or dire
ctory
(promod㉿kali)-[~]
$ touch filter.txt
(promod㉿kali)-[~]
$ cat filter.txt
(promod㉿kali)-[~]
$ sort filter.txt
(promod㉿kali)-[~]
$ cat filter.txt
(promod㉿kali)-[~]
$ nl filter.txt
(promod㉿kali)-[~]
$ cut -f 2 -d ' ' filter.txt
(promod㉿kali)-[~]
$ ls > file_list.txt

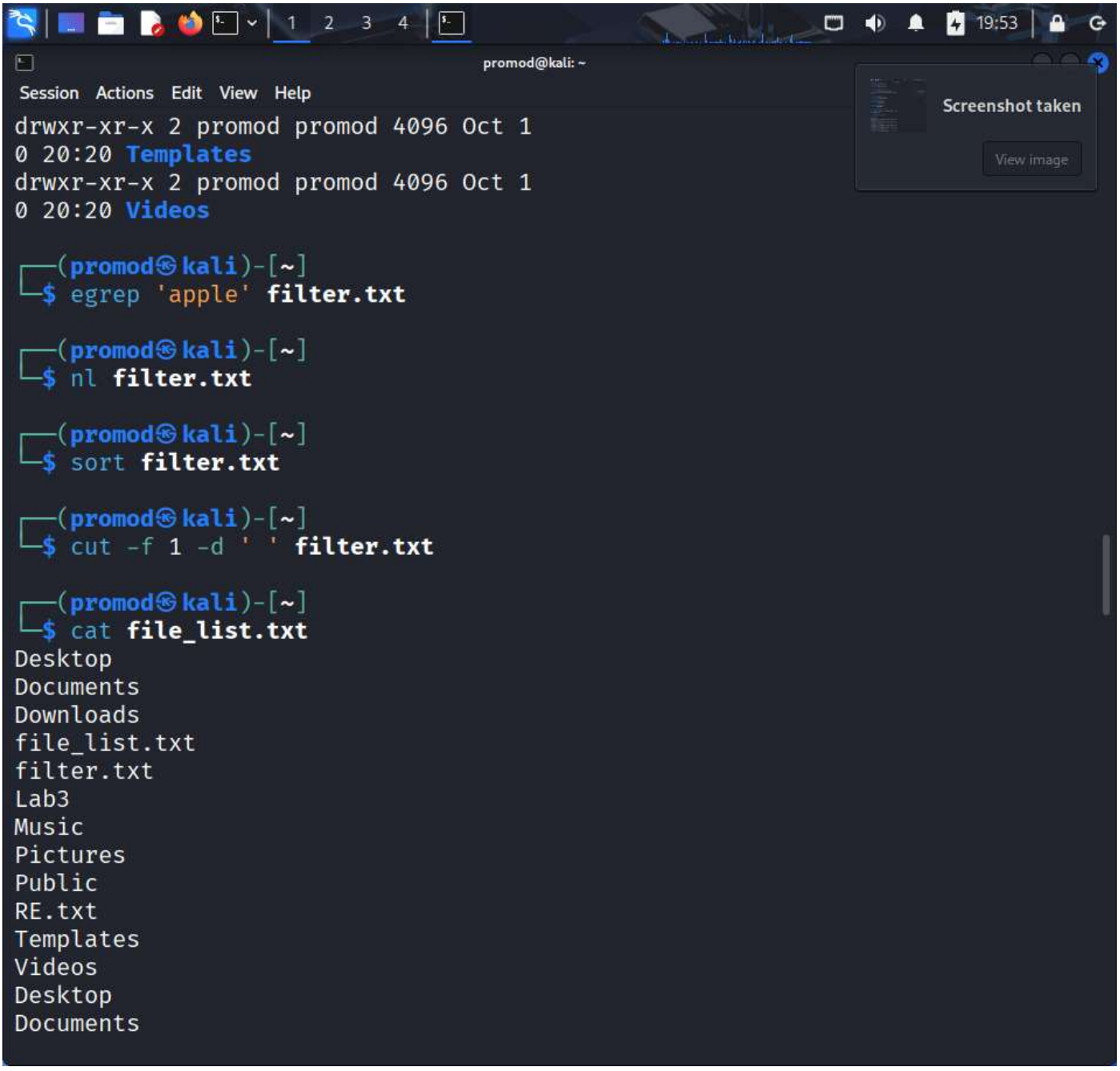
**Fiqure-56**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
(promod㉿kali)-[~]
$ ls > file_list.txt
(promod㉿kali)-[~]
$ wc -l barry.txt > myoutput
wc: barry.txt: No such file or direct
ory
(promod㉿kali)-[~]
$ ls >> file_list.txt
(promod㉿kali)-[~]
$ touch myoutput
(promod㉿kali)-[~]
$ cat myoutput
(promod㉿kali)-[~]
$ egrep 'oranges' filter.txt > foun
d_oranges.txt
(promod㉿kali)-[~]
$ ls -l
total 40
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Desktop
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Documents
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Downloads
-rw-rw-r-- 1 promod promod 217 Oct 2
0 19:23 file_list.txt
-rw-rw-r-- 1 promod promod 0 Oct 2
Screenshot taken
View image

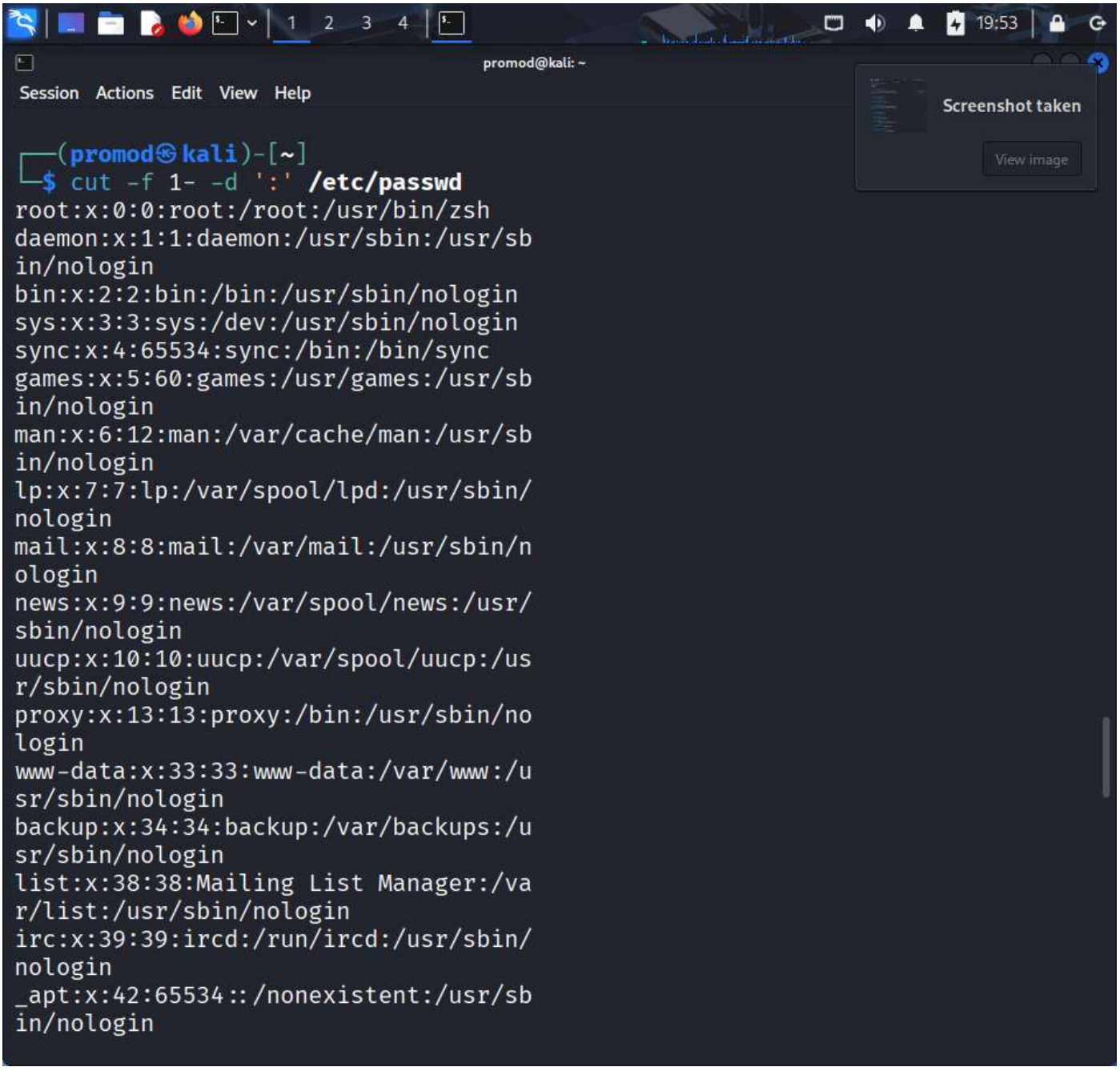
**Fiqure-57**


promod@kali: ~
Session Actions Edit View Help
Templates
Videos
(promod㉿kali)-[~]
$ wc -w file.txt > word_count.txt
wc: file.txt: No such file or directo
ry
Screenshot taken
View image
(promod㉿kali)-[~]
$ touch gile.txt
(promod㉿kali)-[~]
$ touch world count.txt
(promod㉿kali)-[~]
$ wc -w file.txt > word_count.txt
wc: file.txt: No such file or directo
ry
(promod㉿kali)-[~]
$ touch file.txt
(promod㉿kali)-[~]
$ touch world_count.txt
(promod㉿kali)-[~]
$ wc -w file.txt > word_count.txt
(promod㉿kali)-[~]
$ nl -s '.' -w 5 filter.txt
(promod㉿kali)-[~]
$ cut -f 1- -d ':' /etc/passwd

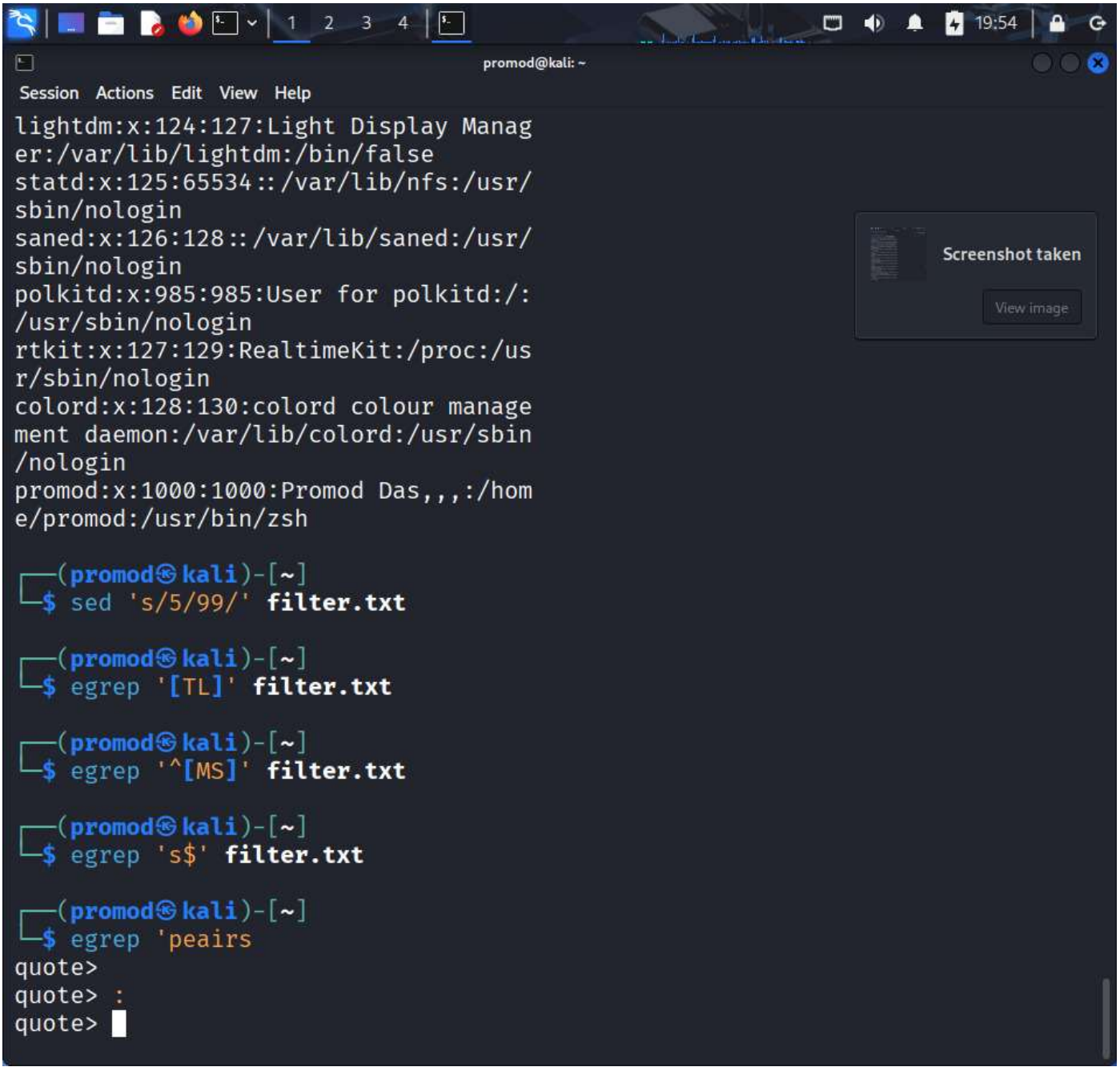
**Fiqure-58**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Templates
drwxr-xr-x 2 promod promod 4096 Oct 1
0 20:20 Videos
(promod㉿kali)-[~]
$ egrep 'apple' filter.txt
(promod㉿kali)-[~]
$ nl filter.txt
(promod㉿kali)-[~]
$ sort filter.txt
(promod㉿kali)-[~]
$ cut -f 1 -d ' ' filter.txt
(promod㉿kali)-[~]
$ cat file_list.txt
Desktop
Documents
Downloads
file_list.txt
filter.txt
Lab3
Music
Pictures
Public
RE.txt
Templates
Videos
Desktop
Documents
Screenshot taken
View image

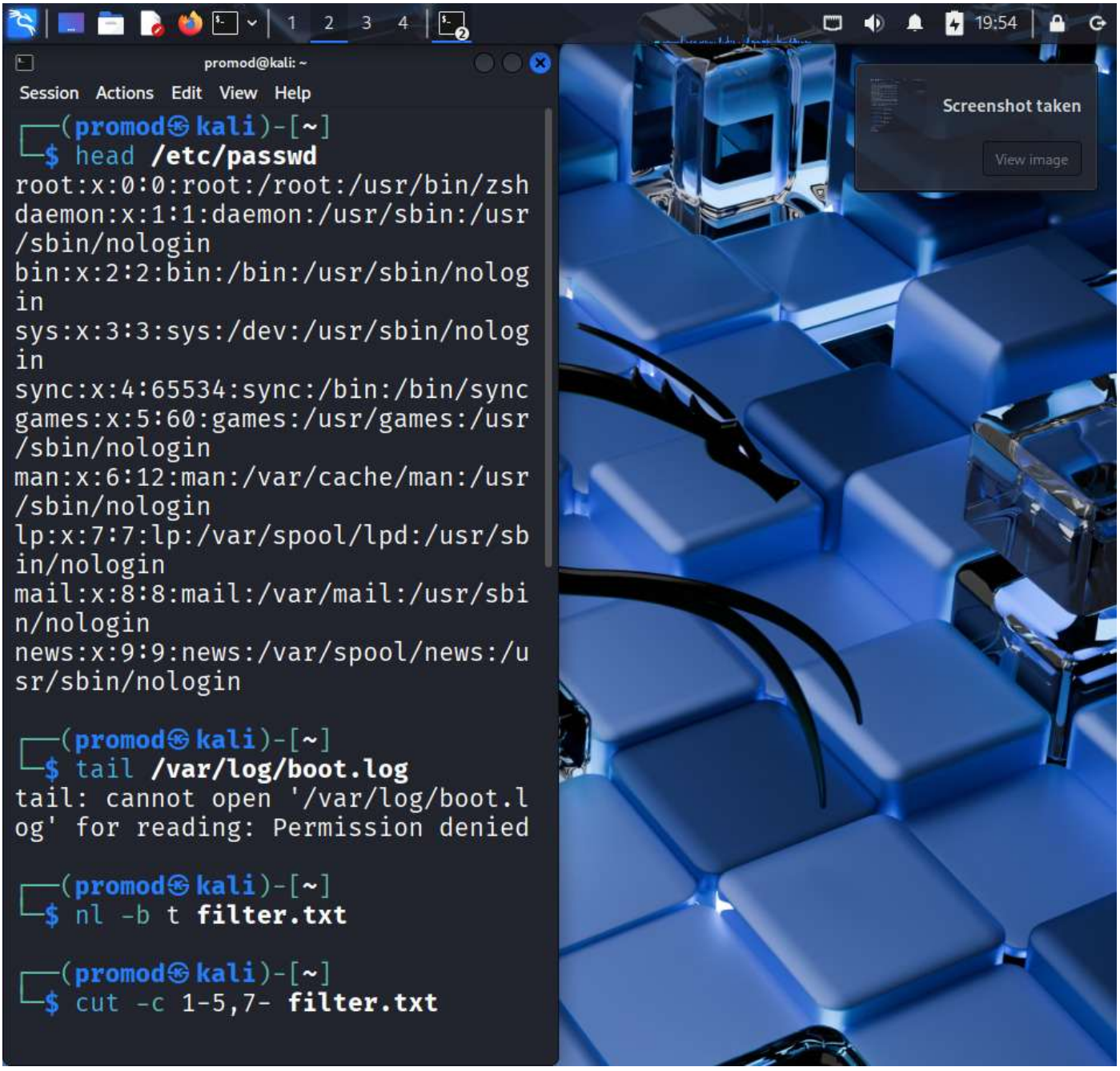
**Fiqure-59**


1 2 3 4
19:53
promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
┌──(promod㉿kali)-[~]
└─$ cut -f 1- -d ':' /etc/passwd
root:x:0:0:root:/root:/usr/bin/zsh
daemon:x:1:1:daemon:/usr/sbin:/usr/sb
in/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sb
in/nologin
man:x:6:12:man:/var/cache/man:/usr/sb
in/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/
nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/n
ologin
news:x:9:9:news:/var/spool/news:/usr/
sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/us
r/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/no
login
www-data:x:33:33:www-data:/var/www:/u
sr/sbin/nologin
backup:x:34:34:backup:/var/backups:/u
sr/sbin/nologin
list:x:38:38:Mailing List Manager:/va
r/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/
nologin
_apt:x:42:65534::/nonexistent:/usr/sb
in/nologin

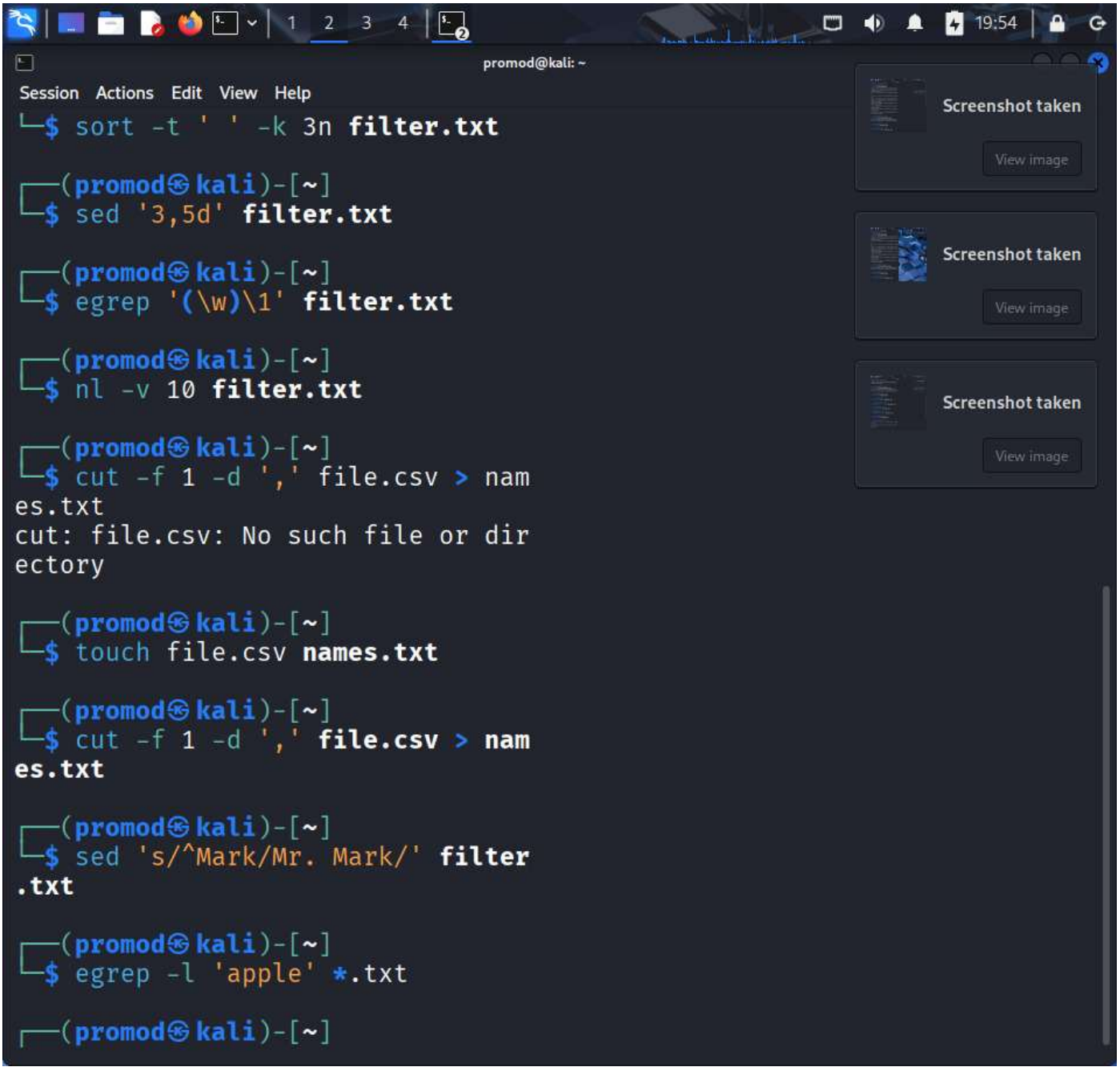
**Fiqure-60**


1 2 3 4
19:54
promod@kali: ~
Session Actions Edit View Help
lightdm:x:124:127:Light Display Manag
er:/var/lib/lightdm:/bin/false
statd:x:125:65534::/var/lib/nfs:/usr/
sbin/nologin
saned:x:126:128::/var/lib/saned:/usr/
sbin/nologin
polkitd:x:985:985:User for polkitd:/:
/usr/sbin/nologin
rtkit:x:127:129:RealtimeKit:/proc:/us
r/sbin/nologin
colord:x:128:130:colord colour manage
ment daemon:/var/lib/colord:/usr/sbin
/nologin
promod:x:1000:1000:Promod Das,,,:/hom
e/promod:/usr/bin/zsh
Screenshot taken
View image
┌──(promod㉿kali)-[~]
└─$ sed 's/5/99/' filter.txt
┌──(promod㉿kali)-[~]
└─$ egrep '[TL]' filter.txt
┌──(promod㉿kali)-[~]
└─$ egrep '^[MS]' filter.txt
┌──(promod㉿kali)-[~]
└─$ egrep 's$' filter.txt
┌──(promod㉿kali)-[~]
└─$ egrep 'peairs
quote>
quote> :
quote>

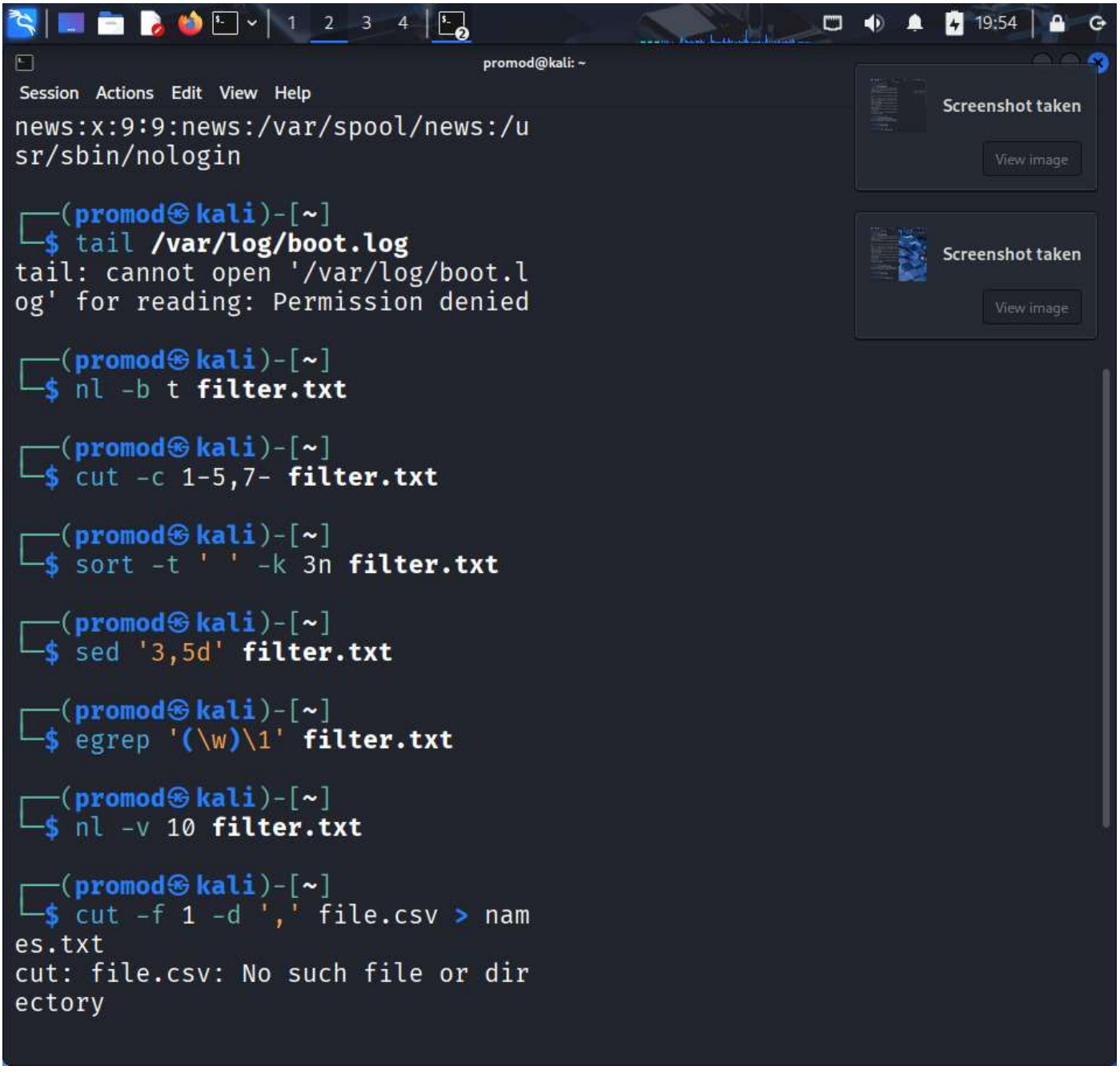
**Fiqure-61**


1 2 3 4
19:54
promod@kali: ~
Session Actions Edit View Help
(promod㉿kali)-[~]
$ head /etc/passwd
root:x:0:0:root:/root:/usr/bin/zsh
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
(promod㉿kali)-[~]
$ tail /var/log/boot.log
tail: cannot open '/var/log/boot.log' for reading: Permission denied
(promod㉿kali)-[~]
$ nl -b t filter.txt
(promod㉿kali)-[~]
$ cut -c 1-5,7- filter.txt
Screenshot taken
View image

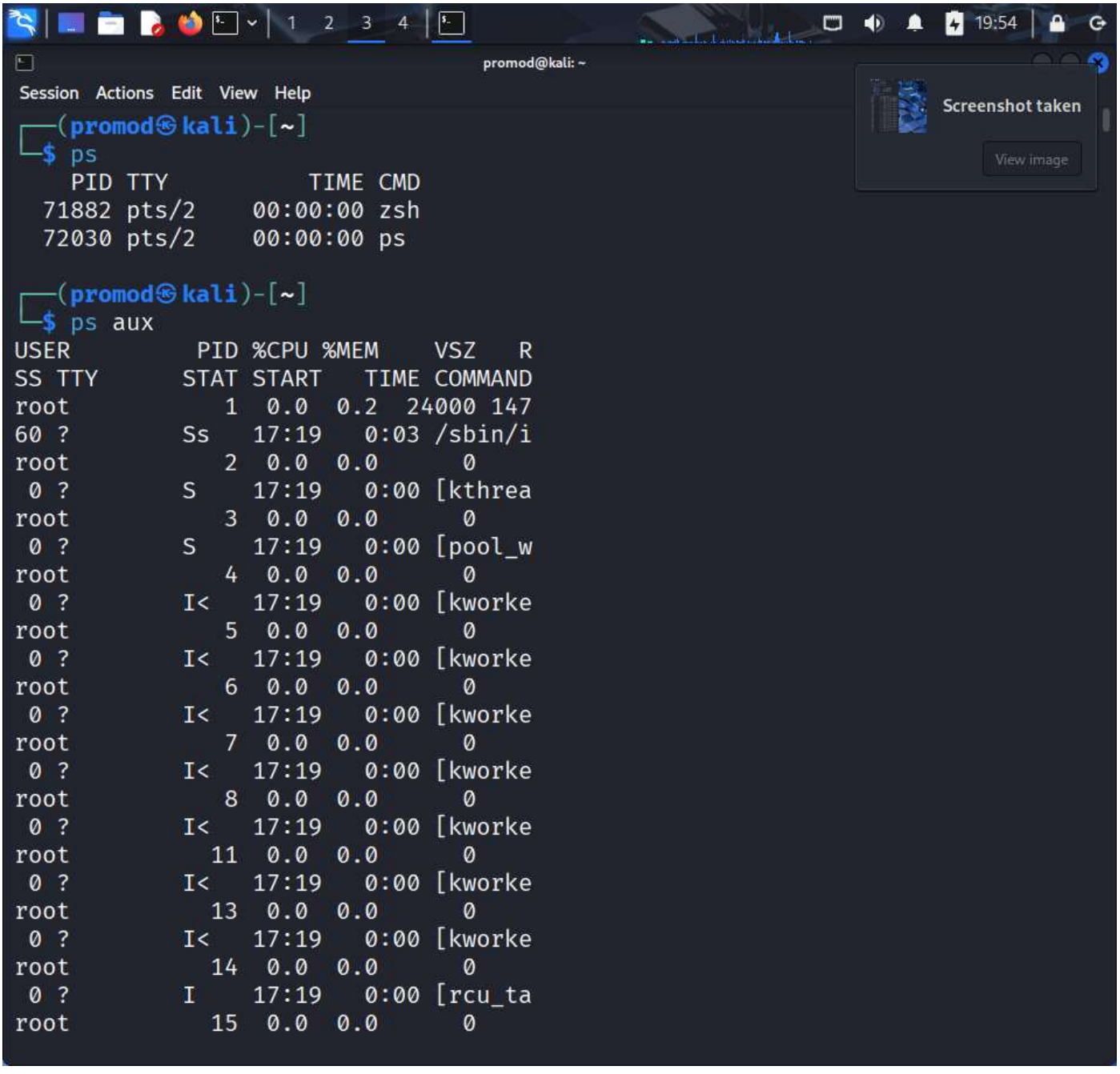
**Fiqure-62**


promod@kali: ~
Session Actions Edit View Help
└─$ sort -t ' ' -k 3n filter.txt
┌──(promod㉿kali)-[~]
└─$ sed '3,5d' filter.txt
┌──(promod㉿kali)-[~]
└─$ egrep '(\w)\1' filter.txt
┌──(promod㉿kali)-[~]
└─$ nl -v 10 filter.txt
┌──(promod㉿kali)-[~]
└─$ cut -f 1 -d ',' file.csv > nam
es.txt
cut: file.csv: No such file or dir
ectory
┌──(promod㉿kali)-[~]
└─$ touch file.csv names.txt
┌──(promod㉿kali)-[~]
└─$ cut -f 1 -d ',' file.csv > nam
es.txt
┌──(promod㉿kali)-[~]
└─$ sed 's/^Mark/Mr. Mark/' filter
.txt
┌──(promod㉿kali)-[~]
└─$ egrep -l 'apple' *.txt
┌──(promod㉿kali)-[~]
Screenshot taken
View image
Screenshot taken
View image
Screenshot taken
View image

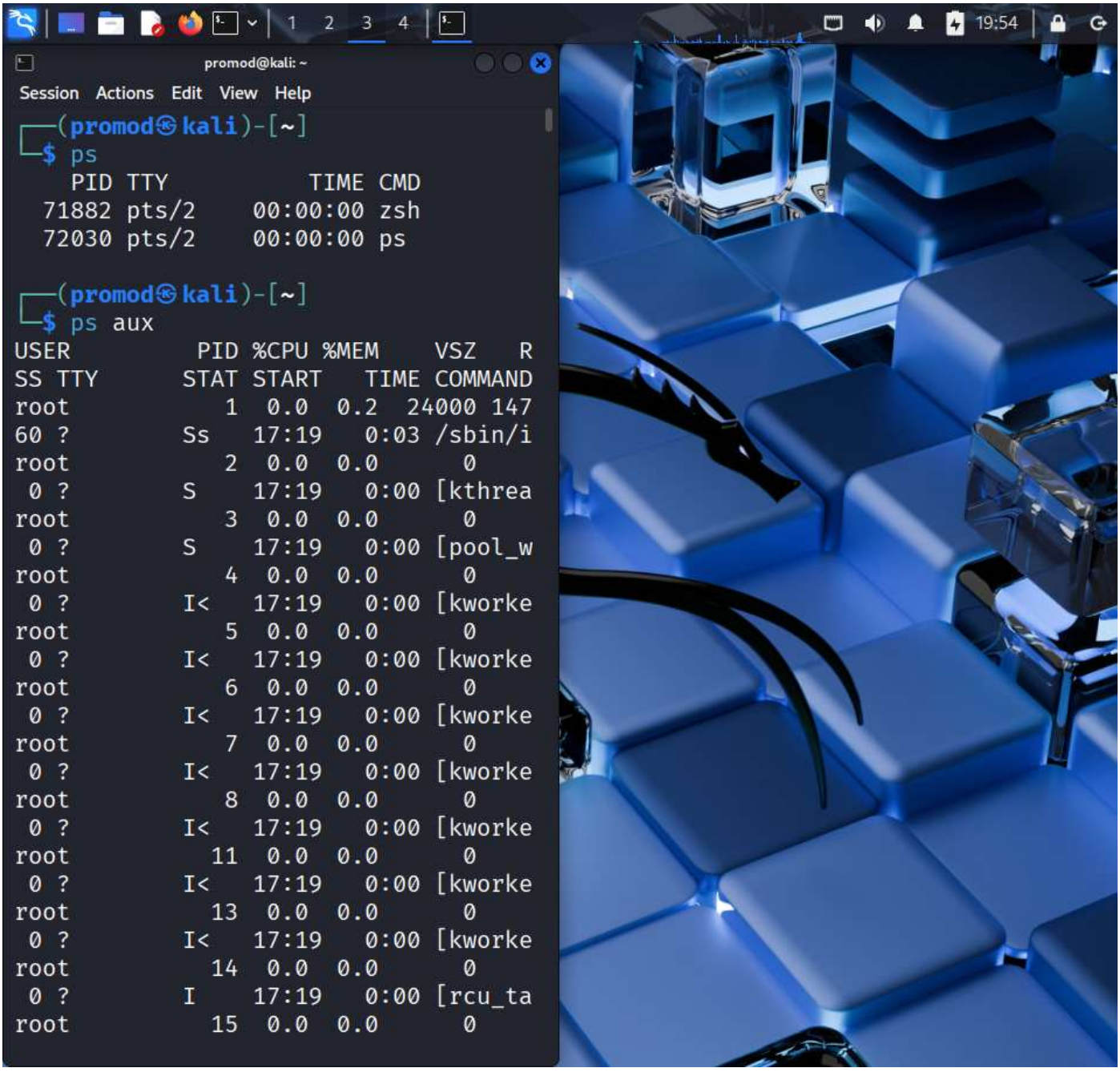
**Fiqure-63**


1 2 3 4
19:54
promod@kali: ~
Session Actions Edit View Help
news:x:9:9:news:/var/spool/news:/u
sr/sbin/nologin
┌──(promod㉿kali)-[~]
└─$ tail /var/log/boot.log
tail: cannot open '/var/log/boot.l
og' for reading: Permission denied
┌──(promod㉿kali)-[~]
└─$ nl -b t filter.txt
┌──(promod㉿kali)-[~]
└─$ cut -c 1-5,7- filter.txt
┌──(promod㉿kali)-[~]
└─$ sort -t ' ' -k 3n filter.txt
┌──(promod㉿kali)-[~]
└─$ sed '3,5d' filter.txt
┌──(promod㉿kali)-[~]
└─$ egrep '(\w)\1' filter.txt
┌──(promod㉿kali)-[~]
└─$ nl -v 10 filter.txt
┌──(promod㉿kali)-[~]
└─$ cut -f 1 -d ',' file.csv > nam
es.txt
cut: file.csv: No such file or dir
ectory
Screenshot taken
View image
Screenshot taken
View image

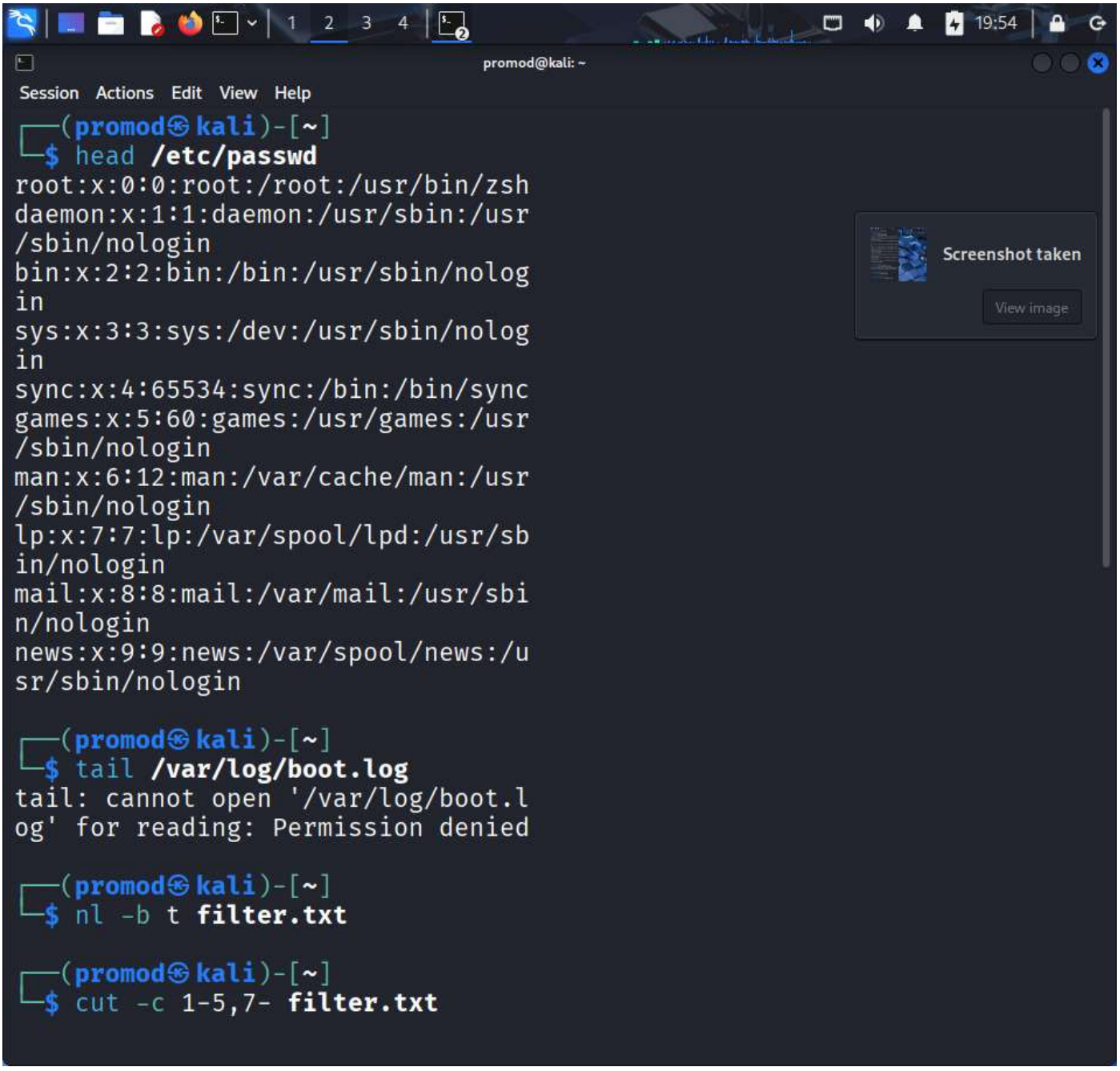
**Fiqure-64**


1 2 3 4
19:54
promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
(promod㉿kali)-[~]
$ ps
PID TTY TIME CMD
71882 pts/2 00:00:00 zsh
72030 pts/2 00:00:00 ps
(promod㉿kali)-[~]
$ ps aux
USER PID %CPU %MEM VSZ R
SS TTY STAT START TIME COMMAND
root 1 0.0 0.2 24000 147
60 ? Ss 17:19 0:03 /sbin/i
root 2 0.0 0.0 0
0 ? S 17:19 0:00 [kthrea
root 3 0.0 0.0 0
0 ? S 17:19 0:00 [pool_w
root 4 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 5 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 6 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 7 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 8 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 11 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 13 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 14 0.0 0.0 0
0 ? I 17:19 0:00 [rcu_ta
root 15 0.0 0.0 0

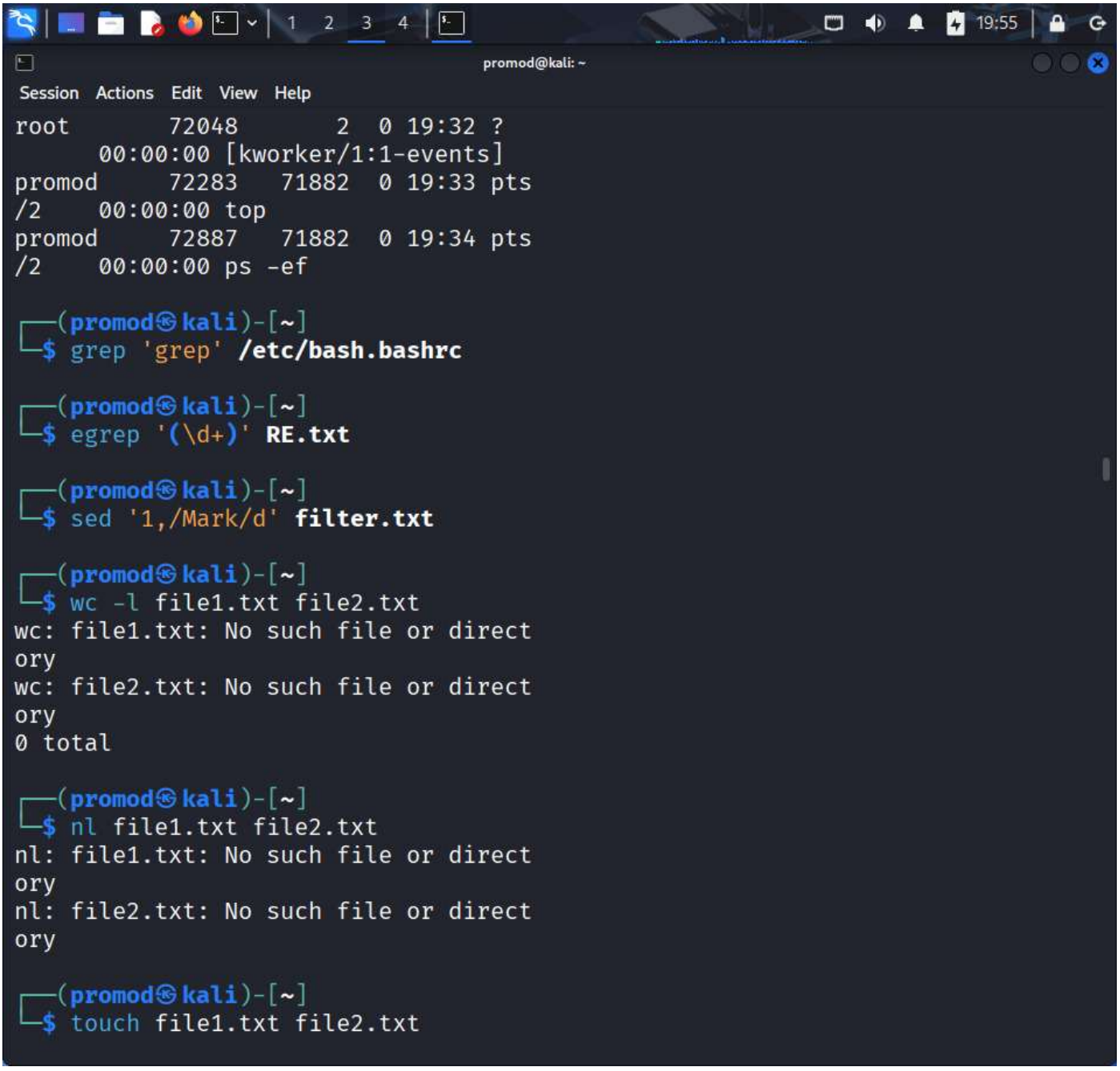
**Fiqure-65**


1 2 3 4
19:54
promod@kali: ~
Session Actions Edit View Help
(promod㉿kali)-[~]
$ ps
PID TTY TIME CMD
71882 pts/2 00:00:00 zsh
72030 pts/2 00:00:00 ps
(promod㉿kali)-[~]
$ ps aux
USER PID %CPU %MEM VSZ R
SS TTY STAT START TIME COMMAND
root 1 0.0 0.2 24000 147
60 ? Ss 17:19 0:03 /sbin/i
root 2 0.0 0.0 0
0 ? S 17:19 0:00 [kthrea
root 3 0.0 0.0 0
0 ? S 17:19 0:00 [pool_w
root 4 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 5 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 6 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 7 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 8 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 11 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 13 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 14 0.0 0.0 0
0 ? I 17:19 0:00 [rcu_ta
root 15 0.0 0.0 0

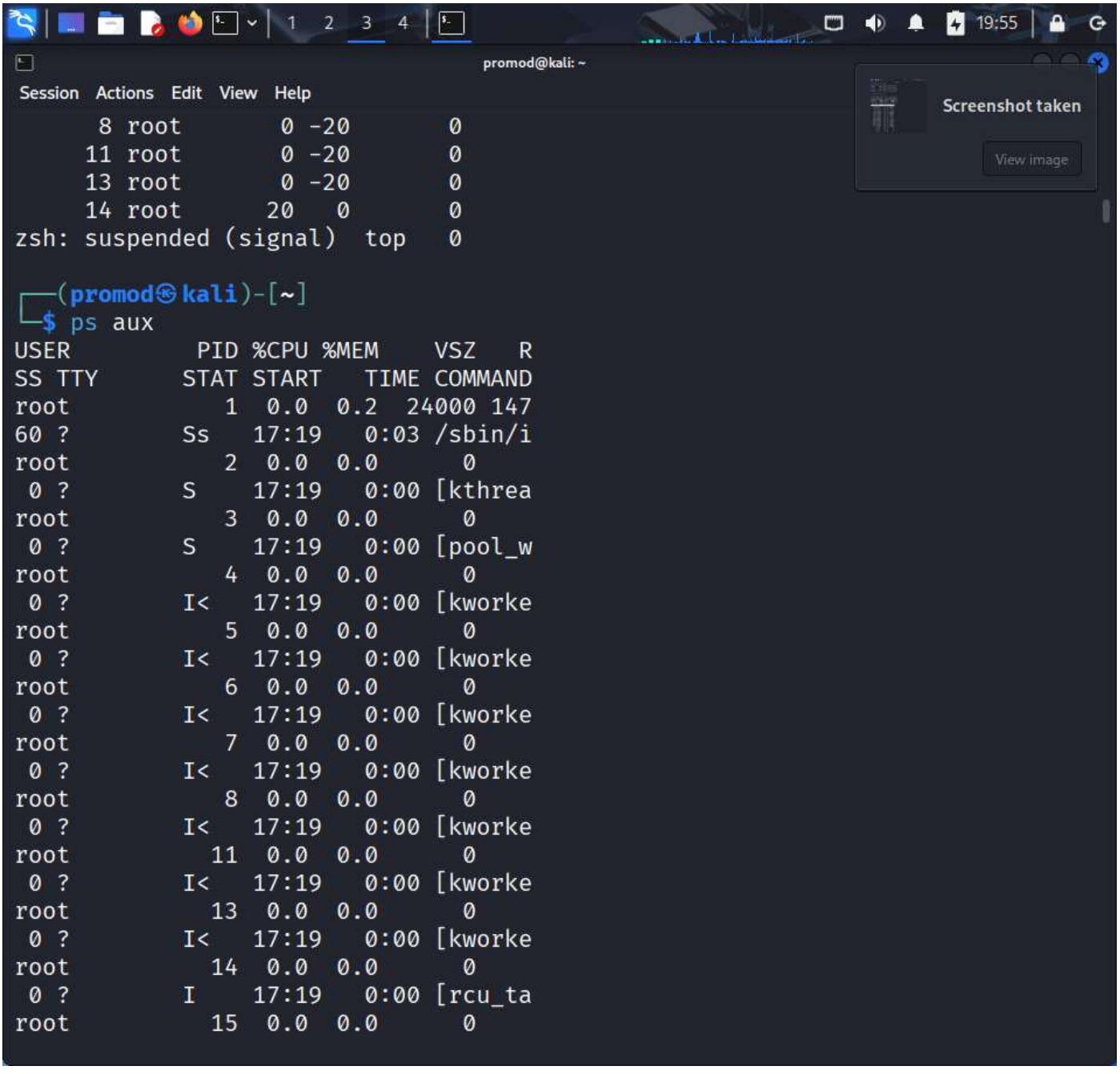
**Fiqure-66**


1 2 3 4
19:54
promod@kali: ~
Session Actions Edit View Help
┌──(promod㉿kali)-[~]
└─$ head /etc/passwd
root:x:0:0:root:/root:/usr/bin/zsh
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
┌──(promod㉿kali)-[~]
└─$ tail /var/log/boot.log
tail: cannot open '/var/log/boot.log' for reading: Permission denied
┌──(promod㉿kali)-[~]
└─$ nl -b t filter.txt
┌──(promod㉿kali)-[~]
└─$ cut -c 1-5,7- filter.txt
Screenshot taken
View image

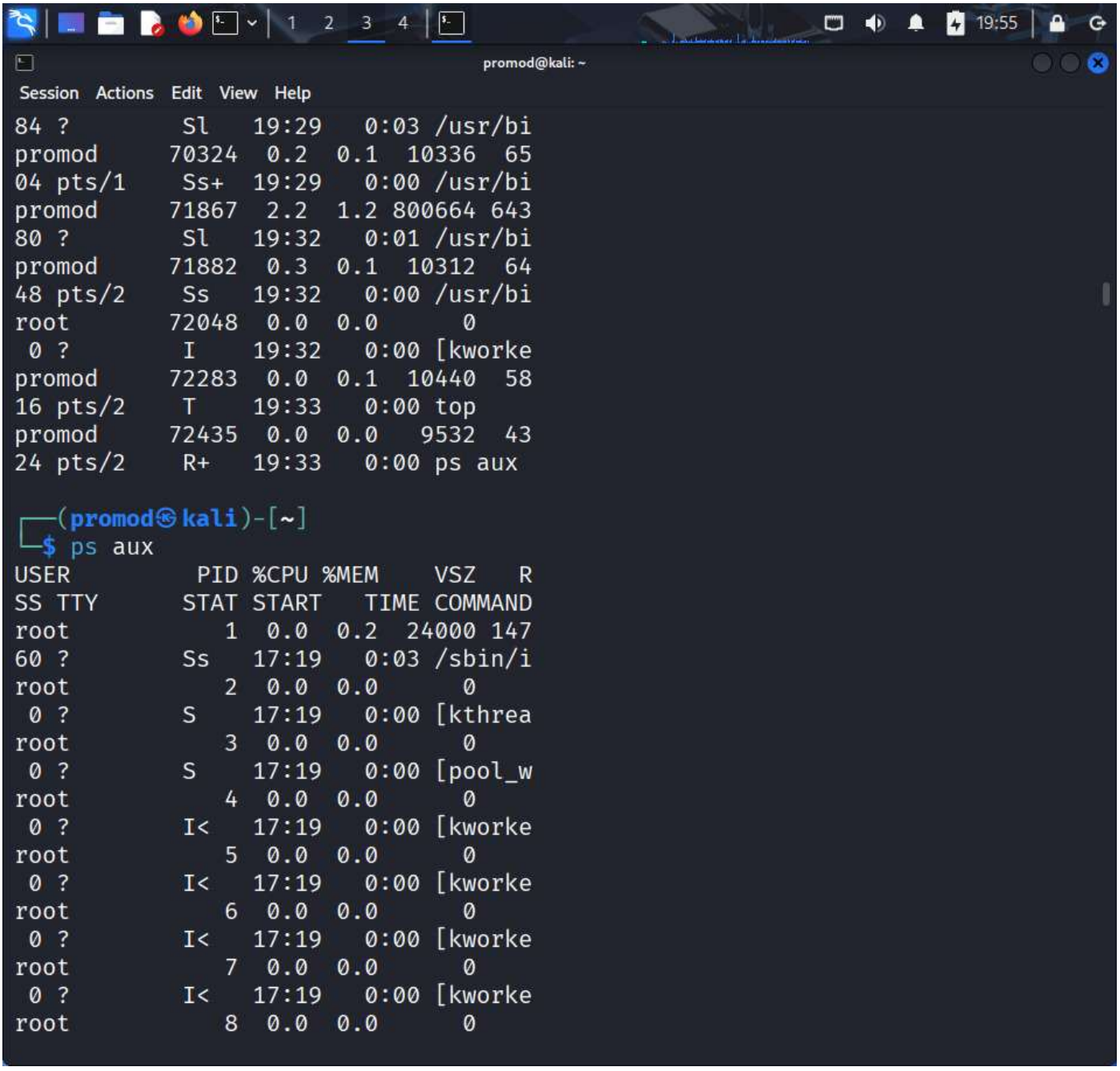
**Fiqure-67**


1 2 3 4
19:55
promod@kali: ~
Session Actions Edit View Help
root 72048 2 0 19:32 ?
00:00:00 [kworker/1:1-events]
promod 72283 71882 0 19:33 pts
/2 00:00:00 top
promod 72887 71882 0 19:34 pts
/2 00:00:00 ps -ef
┌──(promod㉿kali)-[~]
└─$ grep 'grep' /etc/bash.bashrc
┌──(promod㉿kali)-[~]
└─$ egrep '(\d+)' RE.txt
┌──(promod㉿kali)-[~]
└─$ sed '1,/Mark/d' filter.txt
┌──(promod㉿kali)-[~]
└─$ wc -l file1.txt file2.txt
wc: file1.txt: No such file or direct
ory
wc: file2.txt: No such file or direct
ory
0 total
┌──(promod㉿kali)-[~]
└─$ nl file1.txt file2.txt
nl: file1.txt: No such file or direct
ory
nl: file2.txt: No such file or direct
ory
┌──(promod㉿kali)-[~]
└─$ touch file1.txt file2.txt

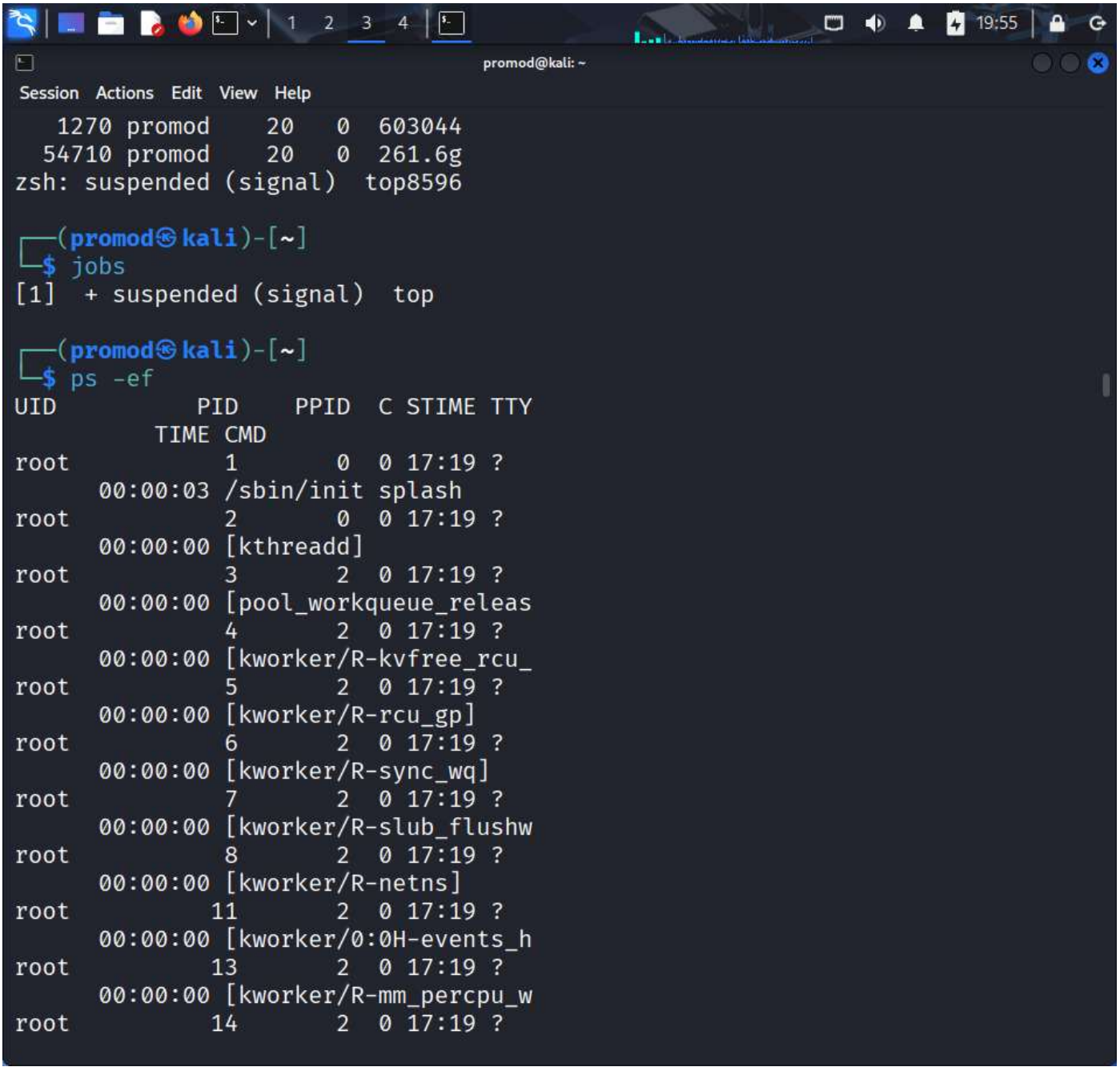
**Fiqure-68**


1 2 3 4
19:55
promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
8 root 0 -20 0
11 root 0 -20 0
13 root 0 -20 0
14 root 20 0 0
zsh: suspended (signal) top 0
(promod㉿kali)-[~]
$ ps aux
USER PID %CPU %MEM VSZ R
SS TTY STAT START TIME COMMAND
root 1 0.0 0.2 24000 147
60 ? Ss 17:19 0:03 /sbin/i
root 2 0.0 0.0 0
0 ? S 17:19 0:00 [kthrea
root 3 0.0 0.0 0
0 ? S 17:19 0:00 [pool_w
root 4 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 5 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 6 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 7 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 8 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 11 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 13 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 14 0.0 0.0 0
0 ? I 17:19 0:00 [rcu_ta
root 15 0.0 0.0 0

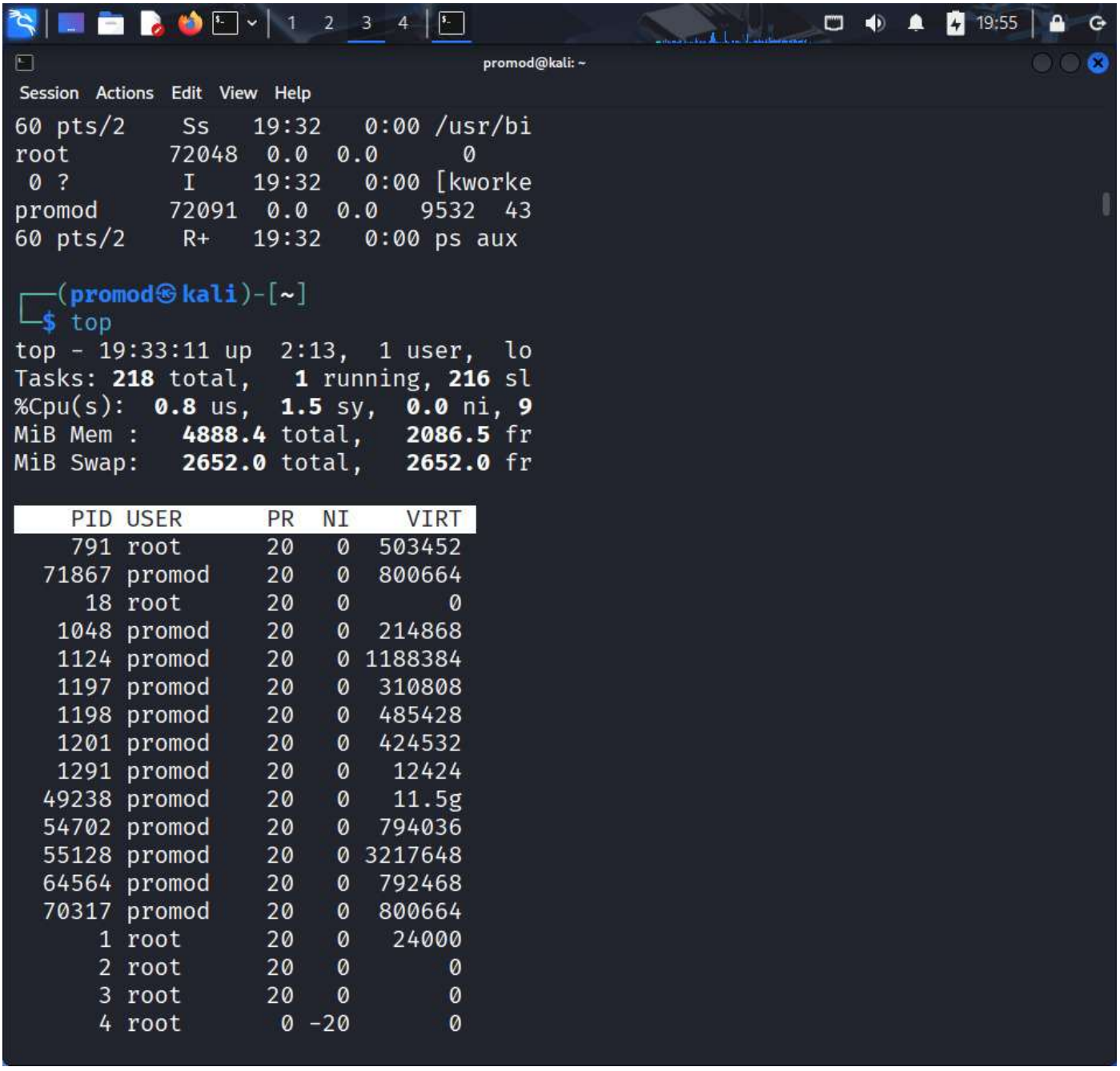
**Fiqure-69**


1 2 3 4
19:55
promod@kali: ~
Session Actions Edit View Help
84 ? Sl 19:29 0:03 /usr/bi
promod 70324 0.2 0.1 10336 65
04 pts/1 Ss+ 19:29 0:00 /usr/bi
promod 71867 2.2 1.2 800664 643
80 ? Sl 19:32 0:01 /usr/bi
promod 71882 0.3 0.1 10312 64
48 pts/2 Ss 19:32 0:00 /usr/bi
root 72048 0.0 0.0 0
0 ? I 19:32 0:00 [kworke
promod 72283 0.0 0.1 10440 58
16 pts/2 T 19:33 0:00 top
promod 72435 0.0 0.0 9532 43
24 pts/2 R+ 19:33 0:00 ps aux
(promod㉿kali)-[~]
$ ps aux
USER PID %CPU %MEM VSZ R
SS TTY STAT START TIME COMMAND
root 1 0.0 0.2 24000 147
60 ? Ss 17:19 0:03 /sbin/i
root 2 0.0 0.0 0
0 ? S 17:19 0:00 [kthrea
root 3 0.0 0.0 0
0 ? S 17:19 0:00 [pool_w
root 4 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 5 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 6 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 7 0.0 0.0 0
0 ? I< 17:19 0:00 [kworke
root 8 0.0 0.0 0

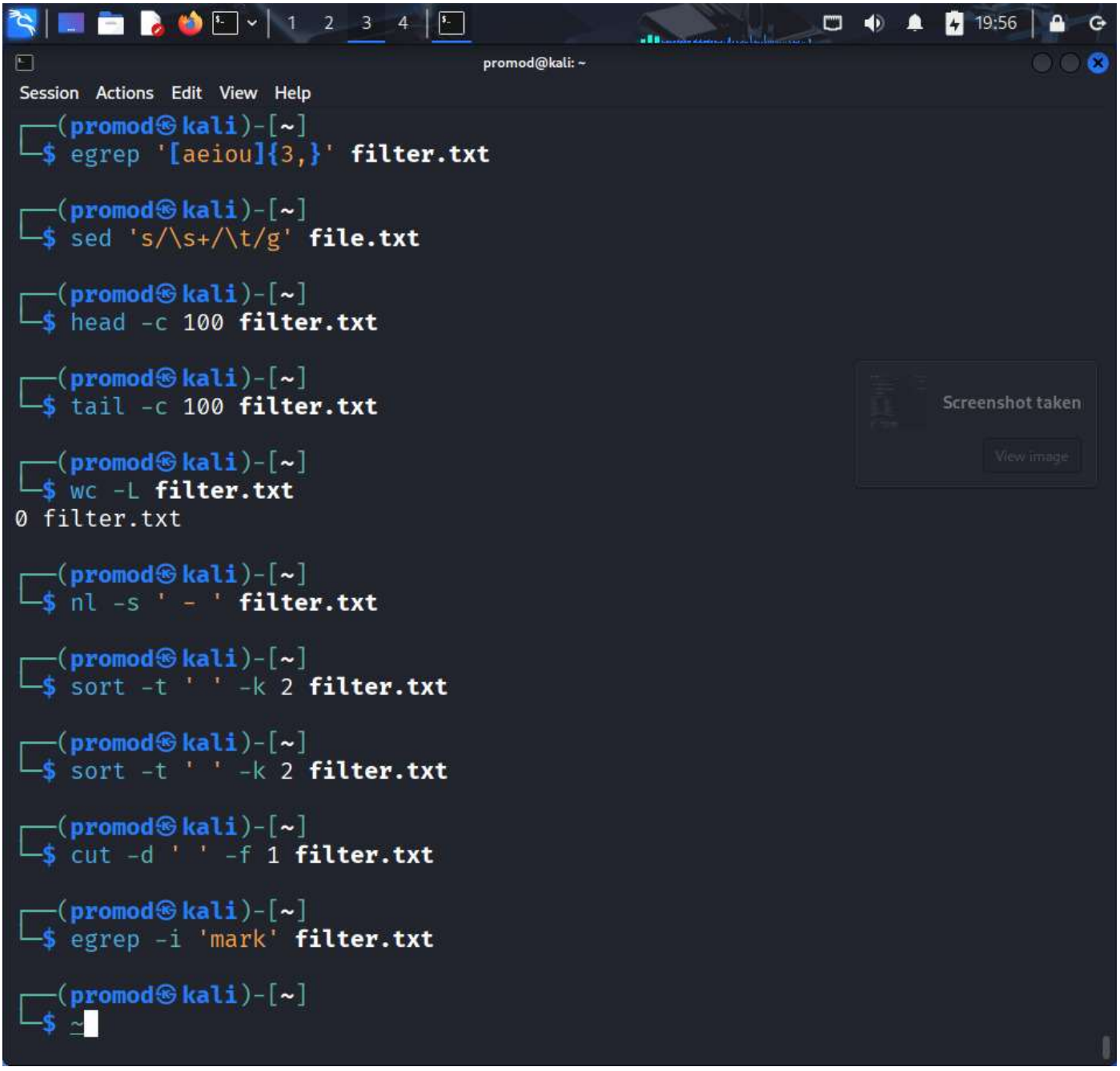
**Fiqure-70**


1 2 3 4
19:55
promod@kali: ~
Session Actions Edit View Help
1270 promod 20 0 603044
54710 promod 20 0 261.6g
zsh: suspended (signal) top8596
(promod㉿kali)-[~]
$ jobs
[1] + suspended (signal) top
(promod㉿kali)-[~]
$ ps -ef
UID PID PPID C STIME TTY
TIME CMD
root 1 0 0 17:19 ?
00:00:03 /sbin/init splash
root 2 0 0 17:19 ?
00:00:00 [kthreadd]
root 3 2 0 17:19 ?
00:00:00 [pool_workqueue_releas
root 4 2 0 17:19 ?
00:00:00 [kworker/R-kvfree_rcu_
root 5 2 0 17:19 ?
00:00:00 [kworker/R-rcu_gp]
root 6 2 0 17:19 ?
00:00:00 [kworker/R-sync_wq]
root 7 2 0 17:19 ?
00:00:00 [kworker/R-slub_flushw
root 8 2 0 17:19 ?
00:00:00 [kworker/R-netns]
root 11 2 0 17:19 ?
00:00:00 [kworker/0:0H-events_h
root 13 2 0 17:19 ?
00:00:00 [kworker/R-mm_percpu_w
root 14 2 0 17:19 ?

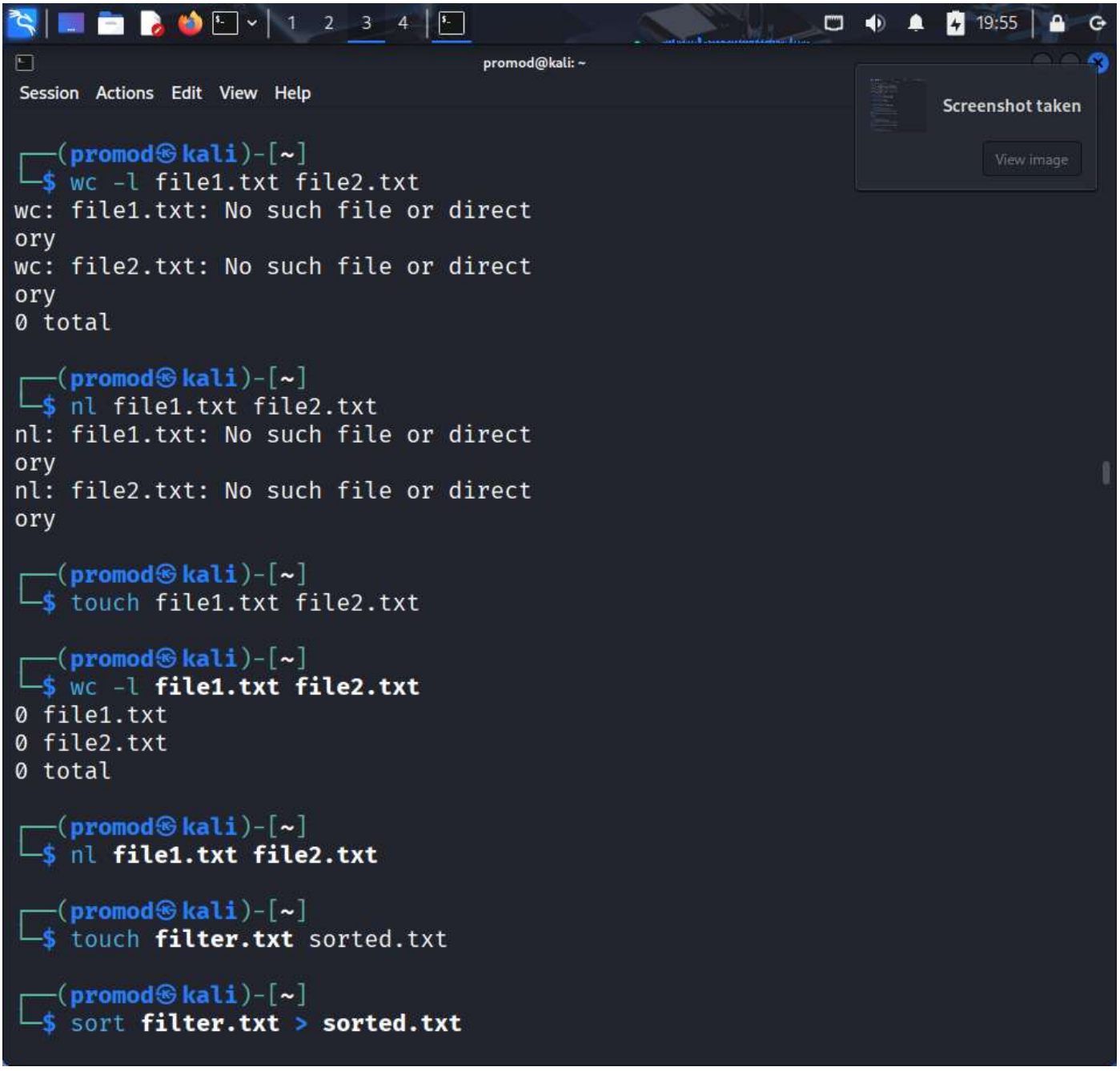
**Fiqure-71**


1 2 3 4
19:55
promod@kali: ~
Session Actions Edit View Help
60 pts/2 Ss 19:32 0:00 /usr/bi
root 72048 0.0 0.0 0
0 ? I 19:32 0:00 [kworke
promod 72091 0.0 0.0 9532 43
60 pts/2 R+ 19:32 0:00 ps aux
(promod㉿kali)-[~]
$ top
top - 19:33:11 up 2:13, 1 user, lo
Tasks: 218 total, 1 running, 216 sl
%Cpu(s): 0.8 us, 1.5 sy, 0.0 ni, 9
MiB Mem : 4888.4 total, 2086.5 fr
MiB Swap: 2652.0 total, 2652.0 fr
PID USER PR NI VIRT
791 root 20 0 503452
71867 promod 20 0 800664
18 root 20 0 0
1048 promod 20 0 214868
1124 promod 20 0 1188384
1197 promod 20 0 310808
1198 promod 20 0 485428
1201 promod 20 0 424532
1291 promod 20 0 12424
49238 promod 20 0 11.5g
54702 promod 20 0 794036
55128 promod 20 0 3217648
64564 promod 20 0 792468
70317 promod 20 0 800664
1 root 20 0 24000
2 root 20 0 0
3 root 20 0 0
4 root 0 -20 0

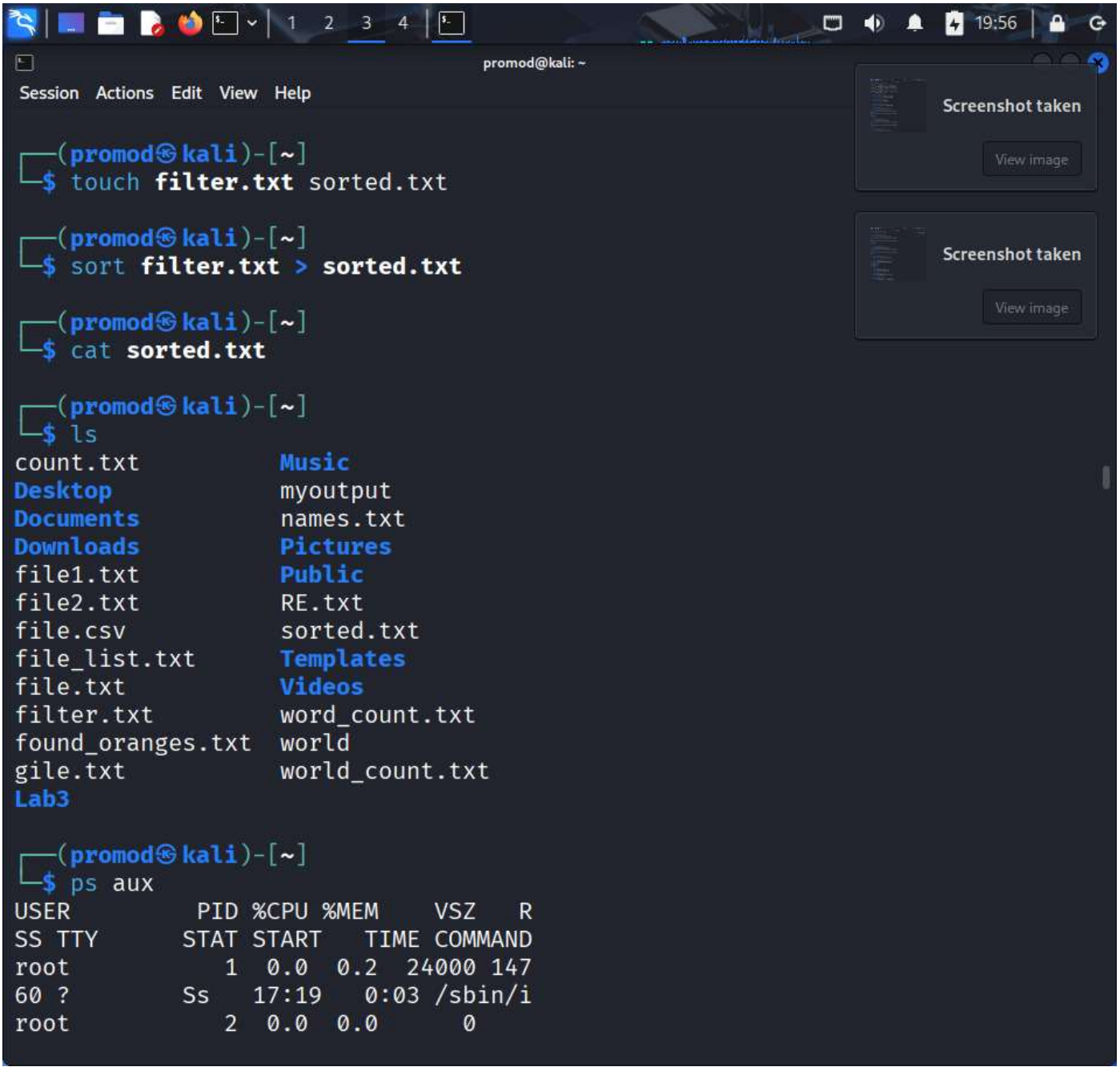
**Fiqure-72**


1 2 3 4
19:56
promod@kali: ~
Session Actions Edit View Help
(promod㉿kali)-[~]
$ egrep '[aeiou]{3,}' filter.txt
(promod㉿kali)-[~]
$ sed 's/\s+/\t/g' file.txt
(promod㉿kali)-[~]
$ head -c 100 filter.txt
(promod㉿kali)-[~]
$ tail -c 100 filter.txt
(promod㉿kali)-[~]
$ wc -L filter.txt
0 filter.txt
(promod㉿kali)-[~]
$ nl -s ' - ' filter.txt
(promod㉿kali)-[~]
$ sort -t ' ' -k 2 filter.txt
(promod㉿kali)-[~]
$ sort -t ' ' -k 2 filter.txt
(promod㉿kali)-[~]
$ cut -d ' ' -f 1 filter.txt
(promod㉿kali)-[~]
$ egrep -i 'mark' filter.txt
(promod㉿kali)-[~]
$ ~
Screenshot taken
View image

**Fiqure-73**


promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
(promod㉿kali)-[~]
$ wc -l file1.txt file2.txt
wc: file1.txt: No such file or direct
ory
wc: file2.txt: No such file or direct
ory
0 total
(promod㉿kali)-[~]
$ nl file1.txt file2.txt
nl: file1.txt: No such file or direct
ory
nl: file2.txt: No such file or direct
ory
(promod㉿kali)-[~]
$ touch file1.txt file2.txt
(promod㉿kali)-[~]
$ wc -l file1.txt file2.txt
0 file1.txt
0 file2.txt
0 total
(promod㉿kali)-[~]
$ nl file1.txt file2.txt
(promod㉿kali)-[~]
$ touch filter.txt sorted.txt
(promod㉿kali)-[~]
$ sort filter.txt > sorted.txt

**Fiqure-74**


1 2 3 4
19:56
promod@kali: ~
Session Actions Edit View Help
Screenshot taken
View image
Screenshot taken
View image
┌──(promod㉿kali)-[~]
└─$ touch filter.txt sorted.txt
┌──(promod㉿kali)-[~]
└─$ sort filter.txt > sorted.txt
┌──(promod㉿kali)-[~]
└─$ cat sorted.txt
┌──(promod㉿kali)-[~]
└─$ ls
count.txt Music
Desktop myoutput
Documents names.txt
Downloads Pictures
file1.txt Public
file2.txt RE.txt
file.csv sorted.txt
file_list.txt Templates
file.txt Videos
filter.txt word_count.txt
found_oranges.txt world
gile.txt world_count.txt
Lab3
┌──(promod㉿kali)-[~]
└─$ ps aux
USER PID %CPU %MEM VSZ R
SS TTY STAT START TIME COMMAND
root 1 0.0 0.2 24000 147
60 ? Ss 17:19 0:03 /sbin/i
root 2 0.0 0.0 0

**Fiqure-75**

**5.OUTPUT:**

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 1 | echo $SHELL | Displays the current shell being used (e.g., Bash). | The Shell |
| 2 | echo "Report Start" | Displays a simple terminal message. | Message Display |
| 3 | pwd | Prints the absolute path of the current working directory. | Print Working Directory |
| 4 | ls | Lists the contents of the current directory. | List Directory |
| 5 | ls -l | Lists contents in the long format, showing permissions and ownership. | Long Listing |
| 6 | ls -a | Lists all files, including hidden files (starting with a dot . ). | List All |
| 7 | cd Documents | Changes the current directory to Documents. | Change Directory |
| 8 | cd Linux | Changes to the Linux directory. | Change Directory |
| 9 | cd .. | Changes directory to the parent directory (one level up). | Go Up |
| 10 | cd ~ | Changes directory back to the home directory. | Go to Home |
| 11 | cd /var/log | Changes to an absolute path (/var/log). | Absolute Path |
| 12 | cd - | Changes to the previous working directory. | Previous Directory |
| 13 | touch file1.txt | Creates an empty file named file1.txt. | Create Empty File |
| 14 | touch addition.sh | Creates an empty shell script file. | Create Script File |
| 15 | touch flower.png test.sh | Creates multiple files in one command. | Create Multiple Files |
| 16 | touch report_part1.txt | Creates a new empty file for the report. | Create File |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 17 | touch data_log_{01..05}.csv | Creates 5 empty CSV files using brace expansion. | Brace Expansion |
| 18 | mkdir Project | Creates a new directory named Project. | Make Directory |
| 19 | mkdir Linux | Creates a directory named Linux. | Make Directory |
| 20 | mkdir -p A/B/C | Creates nested directories using the -p option. | Nested Directory |
| 21 | rmdir Project | Removes the empty directory Project. | Remove Empty Dir |
| 22 | rmdir Green | Removes the empty directory Green. | Remove Empty Dir |
| 23 | rm file1.txt | Removes the file file1.txt. | Remove File |
| 24 | rm addition.sh | Removes the shell script file. | Remove File |
| 25 | rm -r Project | Recursively removes a non-empty directory. | Remove Directory |
| 26 | rm -f report_part1.txt | Forces the removal of the file. | Remove Forcefully |
| 27 | rm -rf A | Forcibly removes the non-empty, nested directory A. | Recursive Force |
| 28 | cp file1.txt file_new.txt | Copies file1.txt to file_new.txt. | Copy File |
| 29 | cp -r Project Project_Backup | Recursively copies a directory. | Copy Directory |
| 30 | cp data_log_01.csv archive/ | Copies a file into the archive directory. | Copy to Directory |
| 31 | mv file1.txt renamed.txt | Renames a file. | Rename File |
| 32 | mv renamed.txt /tmp/ | Moves a file to the /tmp directory. | Move File |
| 33 | mv Project data/ | Moves the Project directory into the data directory. | Move Directory |
| 34 | cat file_new.txt | Displays the entire content of | Display File |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | | file_new.txt. | Content |
| 35 | cat file1.txt file2.txt | Concatenates and displays the content of two files. | Concatenate Files |
| 36 | gedit addition.sh | Opens the script file in the graphical editor gedit. | Open with Gedit |
| 37 | vi Firstfile | Opens the file Firstfile in the Vi command-line editor. | Open with Vi |
| 38 | clear | Clears the terminal screen. | Clear Screen |
| 39 | exit | Closes the current terminal session. | Exit Terminal |
| 40 | ls -l addition.sh | Views the permissions of the addition.sh file. | View Permissions |
| 41 | chmod +x addition.sh | Adds execute permission for the user/owner. | Add Execute Perm |
| 42 | chmod g+w data.txt | Grants write permission to the file's group. | Group Write Perm |
| 43 | chmod o+r data.txt | Grants read permission to others. | Others Read Perm |
| 44 | chmod u-w data.txt | Removes write permission from the owner/user. | Remove Owner Write |
| 45 | chmod go-x script.sh | Removes execute permission from group and others. | Remove Group/Others |
| 46 | chmod a+rw file.txt | Grants read and write to all (owner, group, others). | All Permissions |
| 47 | chmod u=rwx script.sh | Sets the owner's permissions to rwx (7). | Set Owner Perm |
| 48 | chmod 777 file.txt | Sets rwx permissions for everyone (owner, group, others). | Full Numeric Perm |
| 49 | chmod 755 script.sh | Sets rwx for owner, rx for group/others (Standard Script Perm). | Standard Script Perm |
| 50 | chmod 644 file.txt | Sets rw for owner, r for group/others (Standard File Perm). | Standard File Perm |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 51 | chmod 400 secret.txt | Sets only read permission for the owner. | Owner Read Only |
| 52 | chmod 500 script.sh | Sets read and execute permissions for the owner. | Owner Rx |
| 53 | chmod 760 dir | Sets rwx for owner, rw for group, no access for others. | Numeric Combination |
| 54 | chmod 000 file.txt | Removes all permissions for everyone. | No Permissions |
| 55 | ls a* | Lists files starting with 'a' (using wildcard *). | Wildcard * |
| 56 | ls *t | Lists files ending with 't'. | Wildcard * |
| 57 | ls *.mp4 | Lists files with the extension .mp4. | Wildcard * |
| 58 | ls ?.txt | Lists files that have one character followed by .txt (wildcard ?). | Wildcard ? |
| 59 | ls *.??? | Lists files with a three-character extension. | Wildcard ? |
| 60 | ls ?i* | Lists files where the second character is 'i'. | Wildcard ? |
| 61 | ls [sv]* | Lists files starting with either 's' or 'v' (wildcard []). | Wildcard [] |
| 62 | ls [a-v]* | Lists files starting with a letter between 'a' and 'v' (range). | Wildcard [] with range |
| 63 | ls [A-Z]* | Lists files starting with an uppercase letter. | Uppercase Range |
| 64 | ls *[0-9]* | Lists files containing any digit. | Numeric Range |
| 65 | ls file[1-5].txt | Lists files named file1.txt through file5.txt. | Range Selection |
| 66 | rm *~ | Removes all backup files (often ending with ~). | Remove Backup Files |
| 67 | rm *.log | Removes all log files. | Remove by |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | | | Extension |
| 68 | cp f[a-z].dat archive/ | Copies all files named f followed by a single lowercase letter. | Wildcard Copy |
| 69 | mv ?.old /tmp/ | Moves all single-character named files with .old extension. | Wildcard Move |
| 70 | cp /etc/hosts . | Copies the hosts file from /etc to the current directory. | System File Copy |
| 71 | mv file.bak file.txt | Renames a backup file to its original name. | File Rename |
| 72 | cat file1 file2 > combined.txt | Redirects output of two concatenated files to a new file. | Output Redirection |
| 73 | vi secondfile | Opens secondfile in vi to start editing. | Open Vi |
| 74 | :wq | Command inside vi to save and quit. | Vi Save & Quit |
| 75 | :q! | Command inside vi to discard changes and quit. | Vi Force Quit |
| 76 | :w | Command inside vi to save the file but stay in the editor. | Vi Save Only |
| 77 | ZZ | Command inside vi (in edit mode) to save and exit. | Vi Save & Exit |
| 78 | i | Command inside vi to enter insert mode. | Vi Insert Mode |
| 79 | Esc | Key to switch from insert mode back to edit mode in vi. | Vi Edit Mode |
| 80 | echo "New line" >> log.txt | Appends a new line of text to log.txt. | Append Redirection |
| 81 | chmod 775 script.sh | Sets rwx for owner, rwx for group, rx for others. | Numeric Perm |
| 82 | chmod 666 shared.txt | Sets rw for all users. | Numeric Perm |
| 83 | chmod 555 script.sh | Sets r-x for all users (read and execute only). | Numeric Perm |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 84 | chmod u+rw file.txt | Adds read and write to the owner. | Symbolic Perm |
| 85 | chmod a-w file.txt | Removes write permission from all users. | Symbolic Perm |
| 86 | chmod g+x,o-w file.txt | Multiple symbolic changes in one go. | Multiple Perms |
| 87 | cp -v file1.txt file2.txt | Copies a file with verbose output. | Copy Verbose |
| 88 | mv -i file.txt new.txt | Moves a file with an interactive prompt. | Move Interactive |
| 89 | rm -i file.txt | Prompts before removing a file. | Remove Interactive |
| 90 | mkdir data | Creates a directory named data. | Make Directory |
| 91 | touch data/temp.txt | Creates a file inside the new directory. | Nested Touch |
| 92 | ls -ld data | Lists directory details, not its contents. | List Directory |
| 93 | cp /etc/resolv.conf . | Copies another system file. | System File Copy |
| 94 | mv data/temp.txt data/log.txt | Renames a file within a directory. | Rename in Dir |
| 95 | rmdir data | Tries to remove a non-empty directory (will fail). | Remove Empty Dir |
| 96 | cat addition.sh | Displays the content of the script file. | Display Script |
| 97 | echo $USER | Displays the current user's name. | System Variable |
| 98 | echo $PATH | Displays the system's execution path. | System Variable |
| 99 | echo "Welcome to Bash" | Displays a welcome message. | Display Message |
| 100 | cd /usr/bin | Changes to the system's binary directory. | System Path |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 101 | head filter.txt | Prints the first 10 lines. | Head Filter |
| 102 | head -3 filter.txt | Prints the first 3 lines. | Head Filter |
| 103 | head -n 5 filter.txt | Prints the first 5 lines of the file. | Head by Line Count |
| 104 | head -c 50 filter.txt | Prints the first 50 bytes/characters. | Head by Byte Count |
| 105 | head -n 1 filter.txt | Prints only the first line. | Print First Line |
| 106 | tail filter.txt | Prints the last 10 lines. | Tail Filter |
| 107 | tail -3 filter.txt | Prints the last 3 lines. | Tail Filter |
| 108 | tail -n 5 filter.txt | Prints the last 5 lines of the file. | Tail by Line Count |
| 109 | tail -c 50 filter.txt | Prints the last 50 bytes/characters. | Tail by Byte Count |
| 110 | tail -n 1 filter.txt | Prints only the last line. | Print Last Line |
| 111 | sort filter.txt | Sorts the lines alphabetically. | Simple Sort |
| 112 | sort -r filter.txt | Sorts the lines in reverse (descending) order. | Reverse Sort |
| 113 | sort -n data.log | Sorts lines numerically. | Numeric Sort |
| 114 | sort -k 2 filter.txt | Sorts based on the second field (key 2). | Sort by Key |
| 115 | sort -u file.txt | Sorts and removes duplicate lines (unique). | Unique Sort |
| 116 | wc filter.txt | Counts lines, words, and characters in the file. | Word Count All |
| 117 | wc -l filter.txt | Counts only the number of lines. | Count Lines |
| 118 | wc -w filter.txt | Counts only the number of words. | Count Words |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 119 | wc -c filter.txt | Counts only the number of bytes/characters. | Count Bytes |
| 120 | wc -m filter.txt | Counts only the number of characters. | Count Characters |
| 121 | nl filter.txt | Numbers all non-empty lines in the file. | Number Lines |
| 122 | nl -s '.' -w 10 filter.txt | Adds numbers with a dot separator, 10-char padding. | Formatted NL |
| 123 | nl -s ')' file.txt | Uses a closing parenthesis as the line number separator. | Custom Separator |
| 124 | nl -w 3 file.txt | Sets the width of the line numbers to 3 characters. | Custom Width |
| 125 | nl -b a file.txt | Numbers all lines, including blank ones (-b a). | Number All |
| 126 | cut -f 1 -d ' ' filter.txt | Extracts the 1st field, using space as the delimiter (-d). | Cut Field 1 |
| 127 | cut -f 2 -d ' ' filter.txt | Extracts the 2nd field. | Cut Field 2 |
| 128 | cut -f 3 -d ' ' filter.txt | Extracts the 3rd field. | Cut Field 3 |
| 129 | cut -f 1,2 -d ' ' filter.txt | Extracts fields 1 and 2. | Cut Multiple Fields |
| 130 | cut -f 2- -d ' ' filter.txt | Extracts fields starting from the 2nd field to the end. | Cut Range to End |
| 131 | cut -f 1- -d ',' file.csv | Extracts all fields from a CSV file. | Cut All Fields |
| 132 | cut -c 1-5 file.txt | Extracts the first 5 characters of each line. | Cut by Character |
| 133 | cut -c -5 file.txt | Extracts characters from the start to position 5. | Cut Character Range |
| 134 | sed 's/oranges/bananas/g' filter.txt | Globally replaces 'oranges' with 'bananas'. | Sed Global Replace |
| 135 | sed 's/Mark/Jahid/g' | Globally replaces 'Mark' | Sed Global Replace |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | filter.txt | with 'Jahid'. | |
| 136 | sed 's/watermellons/melons/g' filter.txt | Corrects a potential spelling mistake globally. | Sed Global Replace |
| 137 | sed 's/apples/APPLES/' filter.txt | Replaces the first instance of 'apples' only (no g flag). | Sed First Replace |
| 138 | sed '2s/oranges/citrus/g' filter.txt | Replaces 'oranges' with 'citrus' only on line 2. | Sed Specific Line |
| 139 | sed '1,3s/ /-/g' filter.txt | Replaces spaces with hyphens on lines 1 through 3. | Sed Line Range |
| 140 | sed '/Susy/d' filter.txt | Deletes every line containing the pattern 'Susy'. | Sed Delete Pattern |
| 141 | egrep 'mellons' RE.txt | Prints lines containing the string 'mellons' (Extended RegEx). | Grep Simple Search |
| 142 | egrep -n 'mellons' RE.txt | Prints matching lines with their line numbers (-n). | Grep with Line No. |
| 143 | egrep -c 'mellons' RE.txt | Prints only the count of matching lines. | Grep Count Matches |
| 144 | egrep -v 'mellons' RE.txt | Prints lines that do not contain 'mellons' (invert match). | Grep Invert Match |
| 145 | `egrep 'or | is | go' RE.txt` |
| 146 | egrep '[A-K]' RE.txt | Prints lines with names starting from A through K (Character Range). | Grep Character Range |
| 147 | egrep '[TL]' RE.txt | Prints lines starting with 'T' or 'L'. | Grep Specific Characters |
| 148 | egrep '2$' RE.txt | Prints lines ending with '2' (RegEx End of Line $). | Regex End of Line $ |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 149 | egrep '2.+' RE.txt | Prints lines with '2' followed by one or more characters (RegEx +). | Regex One or More + |
| 150 | egrep 's?' RE.txt | Prints lines where 's' matches 0 or 1 times (RegEx ?). | Regex Zero or One ? |
| 151 | egrep '[aeiou]{2,}' RE.txt | Prints lines with two or more vowels in a row (Quantifier). | Regex Quantifier |
| 152 | egrep 'Mark\s' RE.txt | Prints lines where 'Mark' is followed by a space (word boundary). | Regex Word Boundary |
| 153 | egrep '^F' RE.txt | Prints lines that start with 'F' (RegEx Start of Line ^). | Regex Start of Line ^ |
| 154 | egrep '[0-9]{3}' RE.txt | Prints lines containing exactly three consecutive digits. | Regex Quantifier |
| 155 | egrep '(\w\s){2}' RE.txt | Prints lines with two word/space pairs (RegEx Grouping ()). | Regex Grouping () |
| 156 | `egrep 'pe(a | i)rs' RE.txt` | Prints lines containing 'pears' or 'peirs' (RegEx Grouping OR). |
| 157 | `egrep 'peairs | oranges' RE.txt` | Prints lines with either 'peairs' or 'oranges'. |
| 158 | egrep '[^a-z]' RE.txt | Prints lines containing a character that is not a lowercase letter (RegEx NOT Set [^]). | Regex NOT Set [^] |
| 159 | egrep '.' RE.txt | Prints every line (as . matches any single character). | Regex Any Character . |
| 160 | grep 'fruit' | Standard grep command. | Grep Simple Search |
| 161 | `ls -l | head` | Lists long format, |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | | | piping the output to head (first 10 lines). |
| 162 | `ls -l | tail -1` | Lists long format, piping to tail to show only the last line. |
| 163 | `ls | wc -l` | Counts the total number of files/directories in the current path. |
| 164 | `cat filter.txt | sort` | Displays file content and pipes it to be sorted. |
| 165 | `sort filter.txt | head -1` | Sorts the file and prints the alphabetically first line. |
| 166 | `cat filter.txt | egrep 'Mark'` | Filters for lines containing 'Mark' directly from cat output. |
| 167 | `nl filter.txt | cut -f 1` | Numbers lines and then cuts the output to show only line numbers. |
| 168 | `cut -f 2 -d ' ' filter.txt | sort -u` | Extracts the fruit column and lists the unique fruits. |
| 169 | ls > file_list.txt | Redirects the ls output (file list) to file_list.txt. | Redirect Overwrite > |
| 170 | wc -l barry.txt > myoutput | Redirects the line count of barry.txt to myoutput. | Redirect Overwrite > |
| 171 | ls >> file_list.txt | Appends the current directory list to the existing file. | Redirect Append >> |
| 172 | cat myoutput | Displays the content of the redirected file. | Cat Redirected File |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 173 | egrep 'oranges' filter.txt > found_oranges.txt | Redirects all lines with 'oranges' to a new file. | Redirect Grep Output |
| 174 | head -3 filter.txt >> found_oranges.txt | Appends the first three lines of the file. | Append Head Output |
| 175 | `ls -l | head -3 | tail -1` |
| 176 | `egrep 'apple' filter.txt | wc -l` | Counts lines containing 'apple'. |
| 177 | `nl filter.txt | egrep 'Fred'` | Numbers lines, then finds the line for 'Fred'. |
| 178 | `sort filter.txt | nl -s '.'` | Sorts the file and adds numbered prefixes. |
| 179 | `cut -f 1 -d ' ' filter.txt | sort` | Extracts names and sorts them alphabetically. |
| 180 | `cat file_list.txt | head -5 | tail -1` |
| 181 | wc -w file.txt > word_count.txt | Redirects only the word count to a file. | Redirect WC |
| 182 | nl -s '.' -w 5 filter.txt | Number lines with custom separator and width 5. | Formatted NL |
| 183 | cut -f 1- -d ':' /etc/passwd | Cuts all fields from the system /etc/passwd file. | System File Cut |
| 184 | sed 's/5/99/' filter.txt | Replaces the first '5' on each line with '99'. | Sed Basic Replace |
| 185 | `egrep '[TL]' filter.txt | wc -l` | Counts the lines with names starting with T or L. |
| 186 | egrep '^[MS]' filter.txt | Prints lines starting with 'M' or 'S'. | Grep Start Pattern |
| 187 | egrep 'es$' filter.txt | Prints lines ending with 'es' (e.g., apples, peaches, limes). | Grep End Pattern |
| 188 | `egrep 's$' filter.txt | cut -f 2 -d ' '` | Prints lines ending with |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | | | 's', then extracts the fruit name. |
| 189 | `egrep 'peairs | grapes' filter.txt` | Finds lines with either 'peairs' or 'grapes'. |
| 190 | head /etc/passwd | Prints the first 10 lines of the system password file. | System File Head |
| 191 | tail /var/log/boot.log | Prints the last 10 lines of the system boot log. | System File Tail |
| 192 | nl -b t filter.txt | Numbers non-empty lines (default nl behavior). | NL Blank Lines |
| 193 | cut -c 1-5,7- filter.txt | Cuts chars 1-5 and all chars from 7 onwards. | Cut Character List |
| 194 | sort -t ' ' -k 3n filter.txt | Sorts based on the 3rd field numerically (-k 3n). | Sort Numeric Key |
| 195 | sed '3,5d' filter.txt | Deletes lines 3 through 5 from the output. | Sed Delete Range |
| 196 | egrep '(\w)\1' filter.txt | Finds lines with any double letter (e.g., 'll'). | Regex Backreference |
| 197 | nl -v 10 filter.txt | Starts line numbering at 10. | NL Start Value |
| 198 | cut -f 1 -d ',' file.csv > names.txt | Extracts the first column from a CSV file. | CSV Cut & Redirect |
| 199 | sed 's/^Mark/Mr. Mark/' filter.txt | Replaces 'Mark' with 'Mr. Mark' only at the start of the line. | Sed Start of Line |
| 200 | egrep -l 'apple' *.txt | Lists only the names of files containing 'apple' (-l). | Grep List Files |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 201 | ps | Displays processes running in the current terminal. | Process Status |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 202 | ps aux | Displays a complete system-wide view of all processes. | System Processes |
| 203 | top | Provides a real-time, dynamic view of system processes. | Real-time Processes |
| 204 | `ps aux \| grep 'bash'` | Lists all processes and filters to show only the 'bash' processes. | |
| 205 | `ps aux \| head -5` | Lists all processes, showing only the first 5 entries. | |
| 206 | kill <PID> | Sends a termination signal (TERM) to the specified Process ID. | Kill Process |
| 207 | kill -9 <PID> | Forcibly kills the specified process (SIGKILL). | Force Kill |
| 208 | bg | Resumes a suspended job in the background. | Background Job |
| 209 | fg | Brings the most recently suspended or background job to the foreground. | Foreground Job |
| 210 | jobs | Lists all background and suspended jobs. | List Jobs |
| 211 | ps -ef | Another common way to display all processes. | Process Status |
| 212 | grep 'grep' /etc/bash.bashrc | Searches for the string 'grep' within a system configuration file. | Grep System File |
| 213 | egrep '(\d+)' RE.txt | Finds any line with one or more digits (RegEx Digits). | Regex Digits |
| 214 | sed '1,/Mark/d' filter.txt | Deletes lines from 1 up to the first line containing | Sed Context Delete |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | | 'Mark'. | |
| 215 | wc -l file1.txt file2.txt | Counts lines for multiple files simultaneously. | WC Multiple Files |
| 216 | nl file1.txt file2.txt | Numbers lines across multiple files. | NL Multiple Files |
| 217 | sort filter.txt > sorted.txt | Sorts the file and redirects output to a new file. | Redirect Sort |
| 218 | cat sorted.txt | Displays the new, sorted file. | Display File |
| 219 | `ls | egrep 'file | dir"` |
| 220 | `head /etc/fstab | tail -1` | Gets the last line of the first 10 lines of fstab. |
| 221 | `ps aux | wc -l` | Counts the total number of running system processes. |
| 222 | `cut -f 1 -d ' ' filter.txt | sort -r` | Extracts names and sorts them in reverse order. |
| 223 | sed 's/Terry/Thomas/g' filter.txt > new_data.txt | Replaces name and redirects to a temporary file. | Sed to File |
| 224 | cat new_data.txt | Displays the content of the modified file. | Display Modified File |
| 225 | `head -5 filter.txt | nl -s ':'` | Gets first 5 lines and numbers them with a colon separator. |
| 226 | `ls -l | egrep 'Mar | Jan"` |
| 227 | cat file1.txt >> file2.txt | Appends the content of file1.txt to the end of file2.txt. | Append Cat |
| 228 | egrep -o '\w+\s\w+\s\d+' filter.txt | Prints only the matched pattern (name, fruit, number). | Grep Only Match |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 229 | top -n 1 | Runs top once and exits automatically. | Top Single Run |
| 230 | `ps aux | grep 'init'` | Finds the main init process. |
| 231 | nl -w 2 filter.txt | Numbers lines with a width of 2. | NL Custom Width |
| 232 | cut -d ':' -f 7 /etc/passwd | Cuts the shell field from the user accounts file. | Cut System File |
| 233 | `cut -d ':' -f 7 /etc/passwd | sort -u` | Lists unique user shells on the system. |
| 234 | chmod u+s script.sh | Sets the setuid bit (advanced permission). | Advanced Perm |
| 235 | chmod g+s dir | Sets the setgid bit on a directory. | Advanced Perm |
| 236 | chmod +t shared.dir | Sets the sticky bit on a directory. | Advanced Perm |
| 237 | ls *.* | Lists files with at least one dot (period) in the name. | Wildcard *.* |
| 238 | ls [a-c]*.txt | Lists .txt files starting with 'a', 'b', or 'c'. | Wildcard Range |
| 239 | mv file.txt /home/user/backup/ | Moves a file using a specified path. | Move to Path |
| 240 | cp file.txt /home/user/Documents/ | Copies a file to a specified path. | Copy to Path |
| 241 | mkdir -p dir1/dir2/dir3 | Creates nested directories. | Nested Directory |
| 242 | rm -r dir1 | Removes the nested directory structure. | Remove Recursive |
| 243 | head -n 10 file.txt > first_ten.txt | Gets first 10 lines and redirects to a file. | Head Redirect |
| 244 | tail -n 10 file.txt >> first_ten.txt | Gets last 10 lines and appends them to the file. | Tail Append |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 245 | `cat first_ten.txt | wc -l` | Counts the total lines in the new file (20 lines). |
| 246 | egrep '^[A-Z]' filter.txt | Prints lines starting with an uppercase letter. | Regex Uppercase |
| 247 | sed 's/^/LINE /' filter.txt | Prepends 'LINE ' to the start of every line. | Sed Prepend |
| 248 | sed 's/$/ END/' filter.txt | Appends ' END' to the end of every line. | Sed Append |
| 249 | `cut -d ' ' -f 1 filter.txt | head -1` | Extracts the first name and prints only the first occurrence. |
| 250 | sort -t ' ' -k 3nr filter.txt | Sorts based on the 3rd field numerically in reverse order. | Sort Reverse Numeric |
| 251 | `ps aux | grep 'chrome' | wc -l` |
| 252 | top -u <user> | Runs top but filters to show processes for a specific user. | Top User Filter |
| 253 | `egrep 'peairs' filter.txt | sed 's/4/FOUR/g'` | Finds the 'peairs' line and replaces the quantity '4' with 'FOUR'. |
| 254 | `cut -d ' ' -f 2- filter.txt | nl` | Cuts out the name column and then numbers the remaining data. |
| 255 | `cat file1 file2 | sort -r > big_sorted.txt` | Concatenates two files, sorts in reverse, and saves to a new file. |
| 256 | head -1 filter.txt > temp.txt | Redirects the first line to a temporary file. | Redirect First Line |
| 257 | tail -1 filter.txt >> temp.txt | Appends the last line to the temporary file. | Append Last Line |
| 258 | cat temp.txt | Displays the temporary | Display Temp |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| | | file containing the first and last lines. | |
| 259 | `ls -l | egrep '^-' | wc -l` |
| 260 | `ls -l | egrep '^d' | wc -l` |
| 261 | chmod 770 dir | Sets rwx for Owner/Group, No access for Others. | Numeric Perm |
| 262 | chmod u=rx,g=r dir | Sets rx for Owner, r for Group. | Symbolic Perm |
| 263 | mv *.tmp /tmp/trash | Moves all temporary files to a trash directory. | Wildcard Move |
| 264 | rmdir -p A/B/C | Removes nested directories A/B/C, A/B, and A if they are empty. | Remove Nested Dir |
| 265 | vi data.log | Opens the data.log file in vi. | Open Vi |
| 266 | vi + data.log | Opens data.log and places the cursor on the last line. | Vi Last Line |
| 267 | nl -i 2 filter.txt | Numbers lines, incrementing by 2. | NL Increment |
| 268 | `sort -k 3 filter.txt | head -3` | Sorts by the quantity column and shows the first 3 entries. |
| 269 | sort -t ' ' -k 3n filter.txt | Sorts by the 3rd field (quantity) numerically. | Sort Numeric |
| 270 | sed '/oranges/!d' filter.txt | Deletes lines that do not contain 'oranges'. | Sed Invert Delete |
| 271 | egrep '^[RMT]' filter.txt | Prints lines starting with R, M, or T. | Grep Start Pattern |
| 272 | egrep '(?=.*oranges)(?=.*Susy)' filter.txt | Finds lines containing both 'oranges' and 'Susy'. | Regex Lookahead |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 273 | `ps aux | awk '{print $1, $11}'` | Extracts the USER and COMMAND columns from ps output. |
| 274 | `ls -l | cut -d ' ' -f 1,5,9` | Extracts permissions, size, and file name from ls -l. |
| 275 | `ls -l | egrep 'Jan | Dec' |
| 276 | `cat data_log_05.csv | tail -5` | Views the last 5 entries of a log file. |
| 277 | `head -10 /etc/services | nl` | Gets the first 10 system services and numbers them. |
| 278 | egrep '([a-z])\1{2}' file.txt | Finds any line with a character repeated 3 consecutive times. | Regex Backreference |
| 279 | head -1 /etc/hosts > hosts.txt | Redirects the first line of the system hosts file. | System File Redirect |
| 280 | cat hosts.txt | Displays the redirected hosts line. | Display Redirected |
| 281 | ps -e | Displays all processes in standard format. | Process Status |
| 282 | ps -f | Displays the full-format process listing. | Process Status |
| 283 | ps -o pid,user,cmd | Displays only PID, user, and command columns. | Process Custom Output |
| 284 | ps -C gedit | Filters processes to show only gedit instances. | Process by Command |
| 285 | ps -u root | Filters to show processes owned only by root. | Process by User |
| 286 | `ps aux | egrep -v 'bash | grep'` |
| 287 | top -b -n 1 | Runs top in batch mode for a single output. | Top Batch Mode |

| # | Command | Usage / Description | Source Concept |
|---|---|---|---|
| 288 | egrep '[aeiou]{3,}' filter.txt | Finds lines with three or more consecutive vowels. | Regex Quantifier |
| 289 | sed 's/\s+/\t/g' file.txt | Replaces multiple spaces with a single tab character. | Sed Space to Tab |
| 290 | head -c 100 filter.txt | Prints the first 100 characters of the file. | Head Character Count |
| 291 | tail -c 100 filter.txt | Prints the last 100 characters of the file. | Tail Character Count |
| 292 | wc -L filter.txt | Prints the length of the longest line in the file. | WC Longest Line |
| 293 | nl -s ' - ' filter.txt | Numbers lines using ' - ' as the separator. | Custom NL Separator |
| 294 | sort -t ' ' -k 2 filter.txt | Sorts the file based on the fruit name column. | Sort by Second Field |
| 295 | `cut -d ' ' -f 1 filter.txt | head -3` | Extracts the names, showing only the first 3. |
| 296 | egrep -i 'mark' filter.txt | Performs a case-insensitive search for 'mark'. | Grep Case-Insensitive |
| 297 | `ps aux | grep 'vi' | cut -d ' ' -f 2` |
| 298 | `ls -l | egrep 'rwx'` | Filters the Long list output to show file/directories with rwx permission. |
| 299 | `ls | sort | tail -1` |
| 300 | `ls -l | cut -d ' ' -f 5 | sort -n` |

## 6.DISCUSSION :

The primary objective of this lab—to gain comprehensive knowledge of fundamental Linux commands and the command-line interface—was successfully fulfilled through the implementation of a diverse set of commands across two focused exercises.

The practical application of **300 Linux commands** demonstrated a strong command over the operating system's core functionalities, categorized as follows:

- **Filesystem and Security:** Proficiency was established in basic file manipulation (cp, mv, rm) and navigation (cd, pwd). Crucially, the lab provided a deep understanding of file permissions, where the **chmod** command, used in both symbolic (u+rwx, go-x) and numeric (777, 755) modes, highlighted its role in system security and access control.

- **Data Transformation (Filters):** The implementation of text-processing filters like **head**, **tail**, **sort**, **cut**, **wc**, and **nl** proved their essential utility in transforming raw data. This skill is vital for system administrators and developers for rapid log analysis and data extraction.

- **Advanced Pattern Matching:** The effective use of **grep** and **egrep** combined with **Regular Expressions (RegEx)** was a key learning outcome. Mastering patterns (^, $, ?, +, [], {}) allows for sophisticated and precise data searching that goes far beyond simple string matching.

- **Command Automation:** The concept of **Piping (|)** and **Redirection (>, >>)** was explored extensively. This demonstrated the immense power and efficiency of the Linux command line by enabling the chaining of multiple small, specialized tools (filters, search utilities) to perform complex tasks, such as counting unique processes (ps aux | sort -u | wc -l).

- **System State Monitoring:** Commands like **ps** and **top** provided real-time insight into the operating system's health, resource consumption, and process lifecycle management, complemented by the ability to control processes using **kill**.

- In essence, the structured lab procedures transitioned from basic file operations to advanced data processing and system control, establishing the command line as an indispensable, efficient, and powerful interface for managing the Linux environment.