

Title: Linux Command List Assessment

Submitted By:

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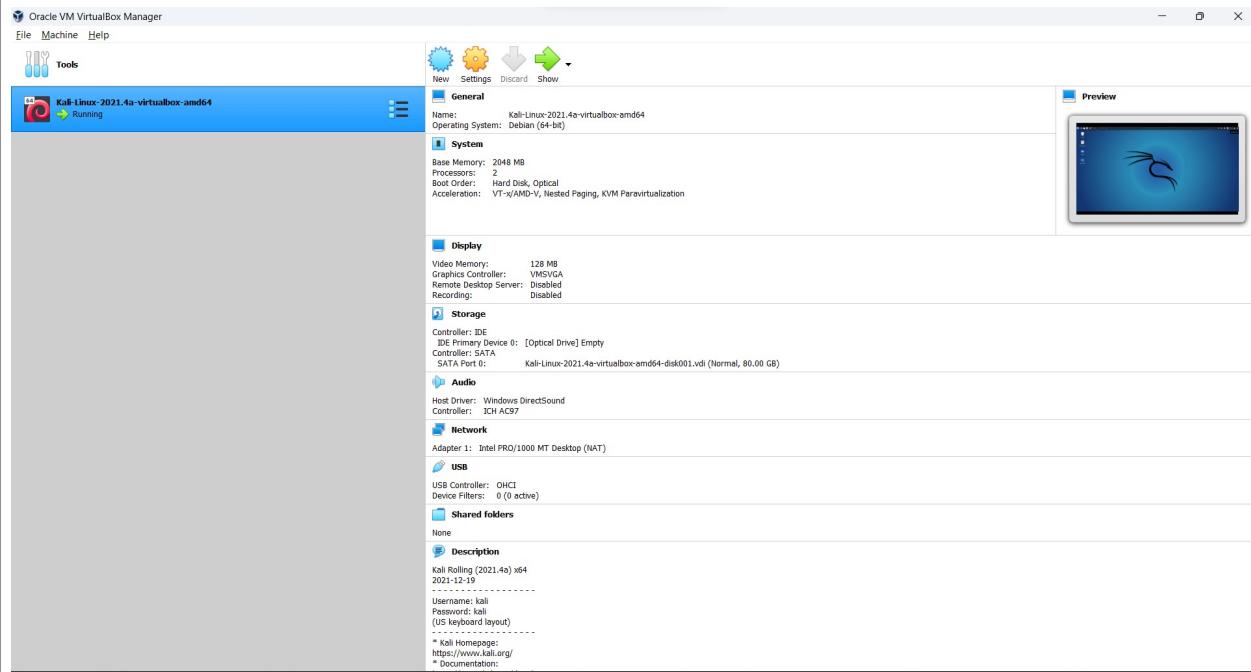
REGISTER NUMBER: 20BKT0048

:Instructions:

The following assessment aims to test your understanding and practical knowledge of various Linux commands. Perform the tasks given below using the appropriate commands. Write down the command(s) used to complete each task. You can use any Linux distribution or command-line interface of your choice. Ensure that you provide the correct output or results for each task.

Note: It is recommended to perform this assessment on a Linux machine or virtual environment.

KALI LINUX



File and Directory Operations:

Commands, Output, Screenshots::

A) ls: List files and directories

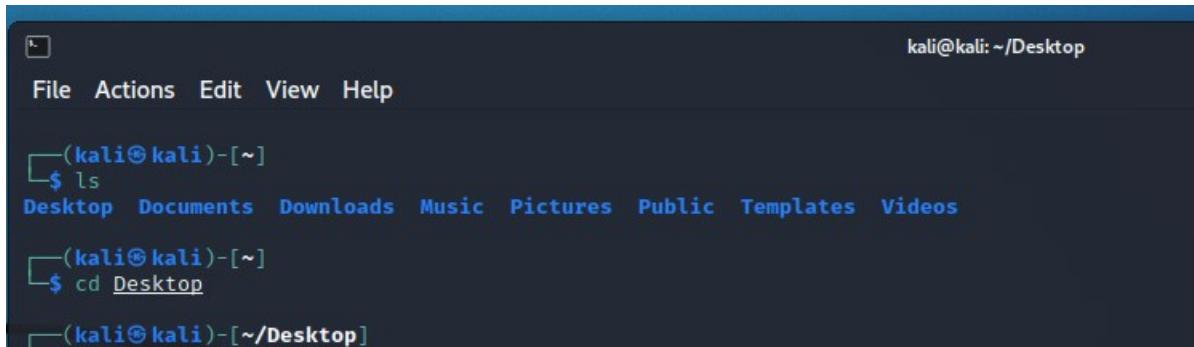
```
└──(kali㉿ kali)-[~]
    └─$ ls
Desktop Documents Downloads Music Pictures Public Templates Videos
```



A screenshot of a terminal window titled 'kali@kali: ~/Desktop'. The window has a dark theme. The menu bar includes 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal prompt shows '(kali㉿ kali)-[~]'. Below the prompt, the command '\$ ls' is entered, followed by a list of directory names: Desktop, Documents, Downloads, Music, Pictures, Public, Templates, and Videos.

B) cd: Change directory

```
└──(kali㉿ kali)-[~]
    └─$ cd Desktop
```



A screenshot of a terminal window titled 'kali@kali: ~/Desktop'. The window has a dark theme. The menu bar includes 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal prompt shows '(kali㉿ kali)-[~]'. Below the prompt, the command '\$ ls' is entered, followed by a list of directory names: Desktop, Documents, Downloads, Music, Pictures, Public, Templates, and Videos. A second terminal session is shown below, with a prompt '(kali㉿ kali)-[~]'. In this session, the command '\$ cd Desktop' is entered, followed by a final prompt '(kali㉿ kali)-[/Desktop]'.

C) pwd: Print working directory

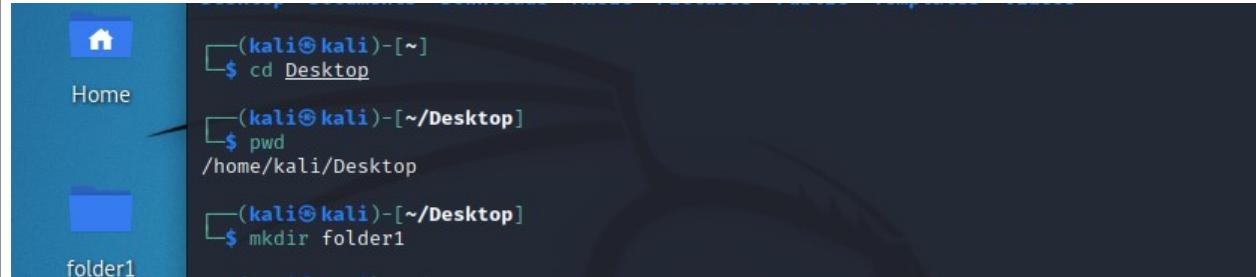
```
└──(kali㉿ kali)-[~/Desktop]  
    └─$ pwd
```

/home/kali/Desktop

```
└──(kali㉿ kali)-[~/Desktop]  
    └─$ pwd  
    /home/kali/Desktop
```

D) mkdir: Make directory

```
└──(kali㉿ kali)-[~/Desktop]  
    └─$ mkdir folder1
```



```
Home └──(kali㉿ kali)-[~]  
      └─$ cd Desktop  
      └──(kali㉿ kali)-[~/Desktop]  
          └─$ pwd  
          /home/kali/Desktop  
          └──(kali㉿ kali)-[~/Desktop]  
              └─$ mkdir folder1
```

E) touch: Create an empty file

```
└──(kali㉿ kali)-[~/Desktop]  
    └─$ touch file1
```



```
file1 └──(kali㉿ kali)-[~/Desktop]  
      └─$ mkdir folder1  
      └──(kali㉿ kali)-[~/Desktop]  
          └─$ touch file1
```

F) cp: Copy files and directories

```
└──(kali㉿kali)-[~/Desktop]
    └──$ cp file1 folder1
```

```
└──(kali㉿kali)-[~/Desktop]
    └──$ ls folder1
        file1
```

```
└──(kali㉿kali)-[~/Desktop]
    $ ls folder1
    └──(kali㉿kali)-[~/Desktop]
        $ cp file1 folder1
    └──(kali㉿kali)-[~/Desktop]
        $ ls folder1
        file1
```

G) mv: Move or rename files and directories

```
└──(kali㉿kali)-[~/Desktop]
    └──$ touch file2.txt
```

```
└──(kali㉿kali)-[~/Desktop]
    └──$ ls
        file1  file2.txt  folder1  newfolder
```

```
└──(kali㉿kali)-[~/Desktop]
    └──$ mv file2.txt newfile2.txt
```

```
└──(kali㉿kali)-[~/Desktop]
```

```
└─$ ls  
file1 folder1 newfile2.txt newfolder
```

```
└──(kali㉿ kali)-[~/Desktop]  
└─$ mv newfile2.txt folder1
```

```
└──(kali㉿ kali)-[~/Desktop]  
└─$ cd folder1
```

```
└──(kali㉿ kali)-[~/Desktop/folder1]  
└─$ ls  
file1 newfile2.txt
```

```
└──(kali㉿ kali)-[~/Desktop]  
└─$ touch file2.txt  
  
└──(kali㉿ kali)-[~/Desktop]  
└─$ ls  
file1 file2.txt folder1 newfolder  
  
└──(kali㉿ kali)-[~/Desktop]  
└─$ mv file2.txt newfile2.txt  
  
└──(kali㉿ kali)-[~/Desktop]  
└─$ ls  
file1 folder1 newfile2.txt newfolder  
  
└──(kali㉿ kali)-[~/Desktop]  
└─$ mv newfile2.txt folder1  
  
└──(kali㉿ kali)-[~/Desktop]  
└─$ cd folder1  
  
└──(kali㉿ kali)-[~/Desktop/folder1]  
└─$ ls  
file1 newfile2.txt
```

H) rm: Remove files and directories

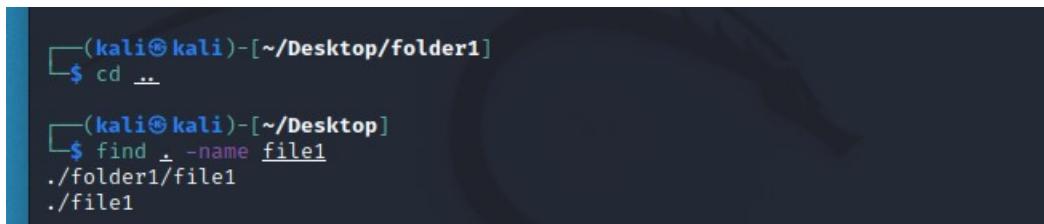
```
└──(kali㉿ kali)-[~/Desktop]  
└─$ rm file1
```

```
└──(kali㉿ kali)-[~/Desktop]  
└─$ rm file1  
└──(kali㉿ kali)-[~/Desktop]  
└─$
```

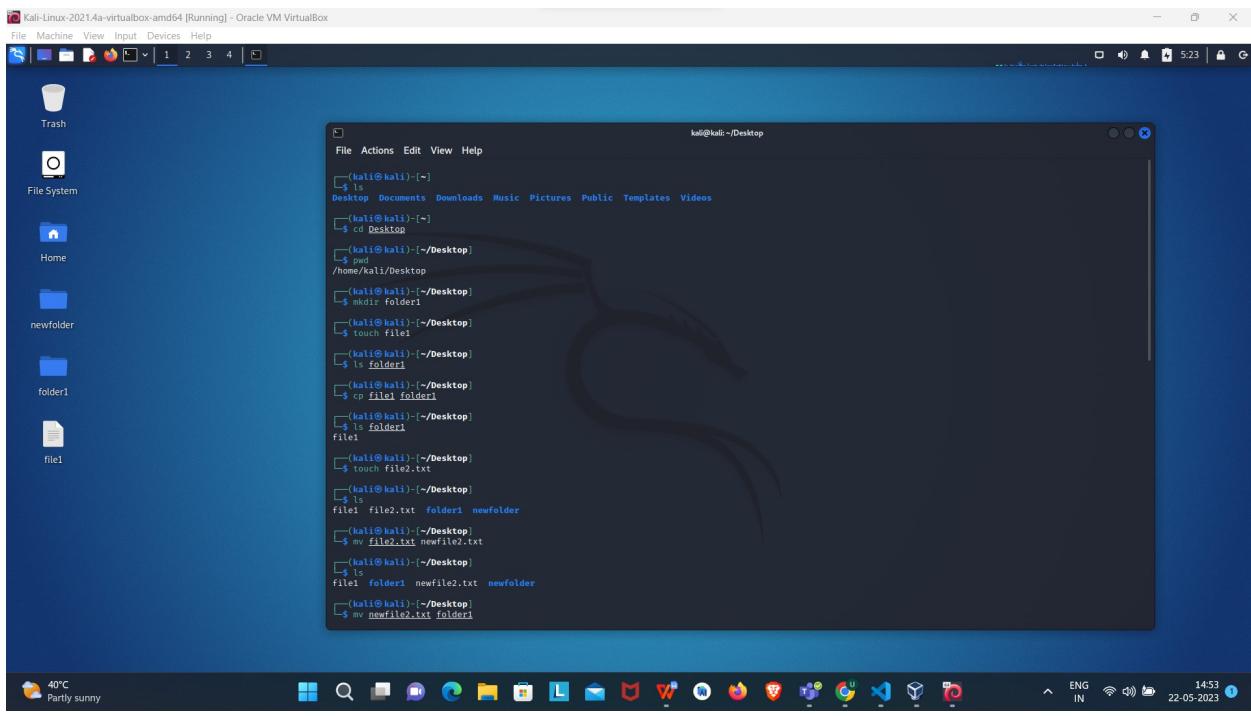
I) find: Search for files and directories

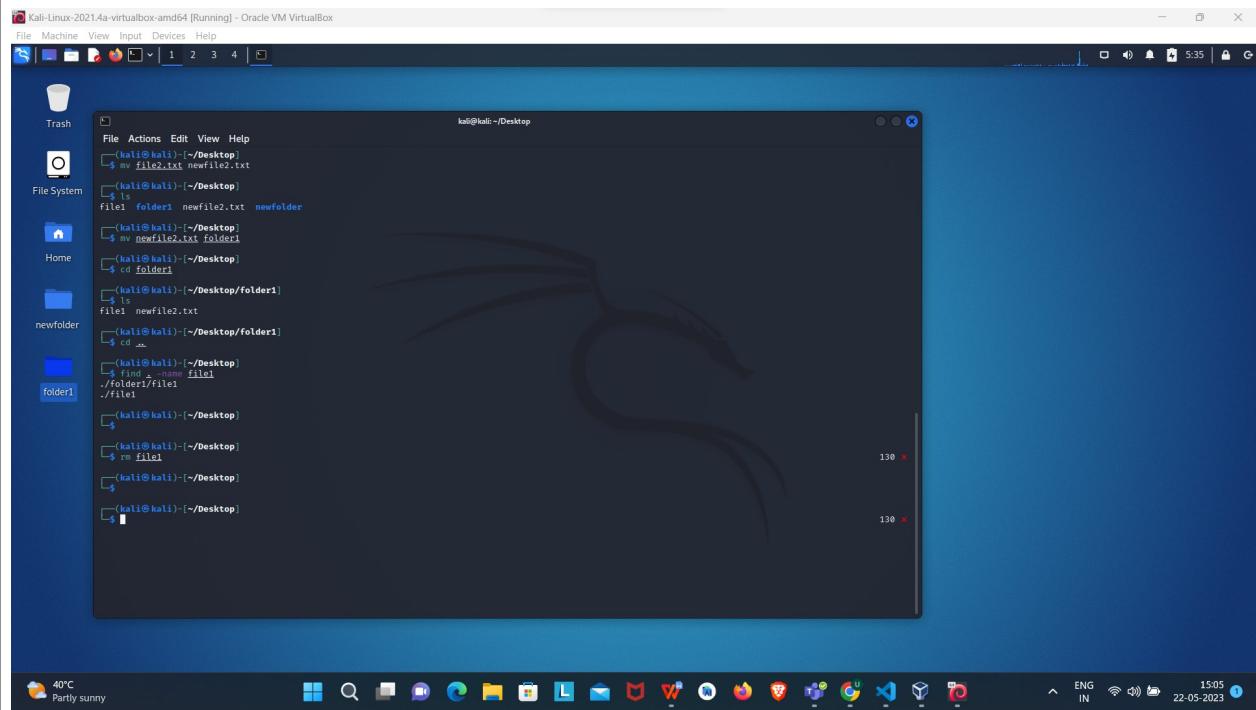
```
└──(kali㉿ kali)-[~/Desktop/folder1]
    └──$ cd ..
```

```
└──(kali㉿ kali)-[~/Desktop]
    └──$ find . -name file1
./folder1/file1
./file1
```



```
└──(kali㉿ kali)-[~/Desktop/folder1]
    └──$ cd ..
└──(kali㉿ kali)-[~/Desktop]
    └──$ find . -name file1
./folder1/file1
./file1
```





File Viewing and Editing:

Commands, Output, Screenshots::

J) cat: Concatenate and display file content

```
(kali㉿ kali)-[~/Desktop]
$ cat >file1.txt
```

hello world, file1 content!!

```
(kali㉿ kali)-[~/Desktop]
$ cat >file2.txt
```

file2 content starts!!

```
└──(kali㉿kali)-[~/Desktop]
  └─$ cat file1.txt file2.txt
hello world, file1 content!!
file2 content starts!!
```

The screenshot shows a Kali Linux desktop environment. On the left, there's a 'File System' window showing two files: 'file1.txt' and 'file2.txt'. Both files have a white document icon. On the right, there's a terminal window with a dark blue background. The terminal prompt is '(kali㉿kali)-[~/Desktop]'. The user has run the command '\$ cat file1.txt file2.txt'. The output of the command is displayed in the terminal, showing 'hello world, file1 content!!' followed by 'file2 content starts!!'.

K) less: View file content with pagination

```
─(kali㉿kali)-[~/Desktop]
└─$ less file2.txt
```

The screenshot shows a Kali Linux desktop environment. On the left, there's a 'File System' window showing two files: 'file1.txt' and 'file2.txt'. Both files have a white document icon. On the right, there's a terminal window with a dark blue background. The terminal prompt is '(kali㉿kali)-[~/Desktop]'. The user has run the command '\$ less file2.txt'. The output of the command is displayed in the terminal, showing the content of 'file2.txt' with pagination. The content includes: 'file2 content starts!!', followed by several paragraphs of 'Lorem Ipsum' placeholder text, and then 'Why do we use it?' and other explanatory text about the history and use of Lorem Ipsum.

L) **head: Display the beginning of a file**

└─(kali㉿ kali)-[~/Desktop]
└─\$ head file2.txt

```
kali@kali: ~/Desktop
File Actions Edit View Help
(kali㉿ kali)-[~]
$ cd Desktop
(kali㉿ kali)-[~/Desktop]
$ head file2.txt
file2 content starts!!
What is Lorem Ipsum?
Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's stand
since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has
ive centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in
release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like
uding versions of Lorem Ipsum.

Why do we use it?
It is a long established fact that a reader will be distracted by the readable content of a page when looking at its
f using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here,
ng it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their
and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved ov
mes by accident, sometimes on purpose (injected humour and the like).

Where does it come from?
Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin litera
ing it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up o
re Latin words, consectetur, from a Lorem Ipsum passage, and going through the cites of the word in classical litera
```

M) **tail: Display the end of a file**

└─(kali㉿ kali)-[~/Desktop]
└─\$ tail file2.txt

```
(kali㉿ kali)-[~/Desktop]
$ tail file2.txt
It is a long established fact that a reader will be distracted by the readable content of a page when looking at its
layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to
using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web p
age editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web si
es still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpos
e (injected humour and the like).

Where does it come from?
Contrary to popular belief, Lorem Ipsum is not simply random text. It has roots in a piece of classical Latin litera
ture from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in V
irginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsum passage, and going through t
he cites of the word in classical literature, discovered the undoubtable source. Lorem Ipsum comes from sections 1.1
0.32 and 1.10.33 of "de Finibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC. Thi
s book is a treatise on the theory of ethics, very popular during the Renaissance. The first line of Lorem Ipsum, "L
orem ipsum dolor sit amet..", comes from a line in section 1.10.32.

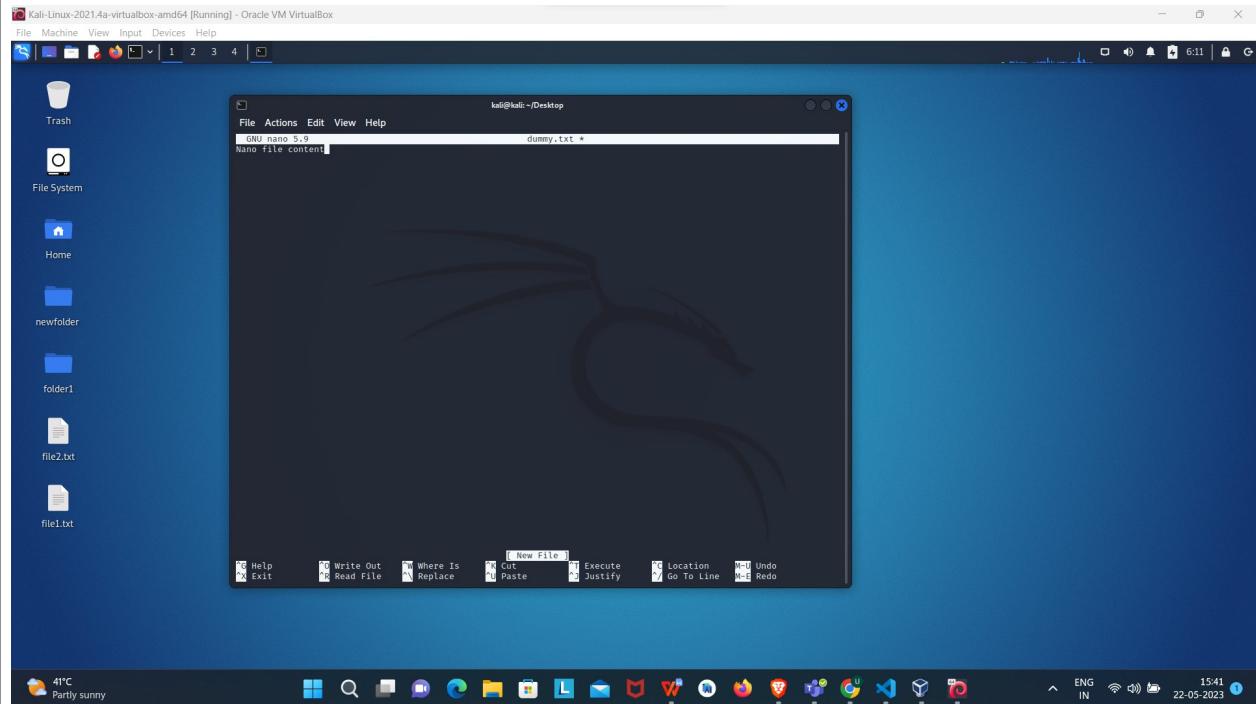
The standard chunk of Lorem Ipsum used since the 1500s is reproduced below for those interested. Sections 1.10.32 an
d 1.10.33 from "de Finibus Bonorum et Malorum" by Cicero are also reproduced in their exact original form, accompani
ed by English versions from the 1914 translation by H. Rackham.

Where can I get some?
There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some fo
rm, by injected humour, or randomised words which don't look even slightly believable. If you are going to use a pas
sage of Lorem Ipsum, you need to be sure there isn't anything embarrassing hidden in the middle of text. All the Lor
em Ipsum generators on the Internet tend to repeat predefined chunks as necessary, making this the first true genera
tor on the Internet. It uses a dictionary of over 200 Latin words, combined with a handful of model sentence structu
res, to generate Lorem Ipsum which looks reasonable. The generated Lorem Ipsum is therefore always free from repetit
ion, injected humour, or non-characteristic words etc.
```

N) **nano: Text editor for creating and editing files**

└─(kali㉿ kali)-[~/Desktop]

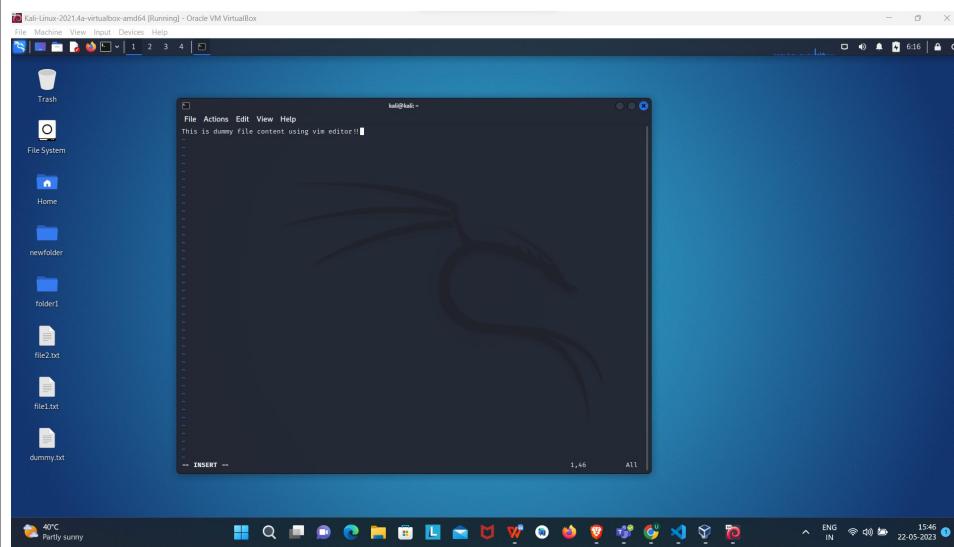
└─\$ nano dummy.txt



O) **vi/vim: Powerful text editor for experienced users**

└─(kali㉿ kali)-[~]

└─\$ vim dummy1.txt



File Permissions:

Commands, Output, Screenshots::

P) chmod: Change file permissions

```
└──(kali㉿ kali)-[~/Desktop]
    └──$ chmod u=r file1.txt
```

The screenshot shows a terminal window titled 'kali@kali: ~/Desktop'. The user has created several files and folders on the desktop. They run the command 'ls -ltha' to list files with detailed information. Then, they run 'chmod u=r file1.txt' to change the permissions of 'file1.txt' so that the owner has read access. Finally, they run 'ls -ltha' again to show that the permission has been changed.

```
kali@kali: ~/Desktop
File Actions Edit View Help
(kali㉿ kali)-[~]
└──$ vim dummy1.txt
(kali㉿ kali)-[~]
└──$ cd Desktop
(kali㉿ kali)-[~/Desktop]
└──$ ls -ltha
total 32K
drwxr-xr-x  2 kali kali 4.0K May 21 15:44 newfolder
drwxr-xr-x  2 kali kali 4.0K May 22 05:19 folder1
-rw-r--r--  1 kali kali 29 May 22 05:44 file1.txt
-rw-r--r--  1 kali kali 3.1K May 22 05:47 file2.txt
-rw-r--r--  1 kali kali 18 May 22 06:11 dummy.txt
-rw-r--r--  1 kali kali 46 May 22 06:16 dummy1.txt
drwxr-xr-x 16 kali kali 4.0K May 22 06:17 ..
drwxr-xr-x  4 kali kali 4.0K May 22 06:17 .
(kali㉿ kali)-[~/Desktop]
└──$ chmod u=r file1.txt
(kali㉿ kali)-[~/Desktop]
└──$ ls -ltha
total 32K
drwxr-xr-x  2 kali kali 4.0K May 21 15:44 newfolder
drwxr-xr-x  2 kali kali 4.0K May 22 05:19 folder1
-rw-r--r--  1 kali kali 29 May 22 05:44 file1.txt
-rw-r--r--  1 kali kali 3.1K May 22 05:47 file2.txt
-rw-r--r--  1 kali kali 18 May 22 06:11 dummy.txt
-rw-r--r--  1 kali kali 46 May 22 06:16 dummy1.txt
drwxr-xr-x 16 kali kali 4.0K May 22 06:17 ..
drwxr-xr-x  4 kali kali 4.0K May 22 06:17 .
(kali㉿ kali)-[~/Desktop]
└──$
```

Q) chown: Change file owner

```
└──(kali㉿ kali)-[~/Desktop]
    └──$ sudo su
    1 □
```

We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:

- #1) Respect the privacy of others.
- #2) Think before you type.
- #3) With great power comes great responsibility.

[sudo] password for kali:

```
└──(root㉿kali)-[~/home/kali/Desktop]
    └──# chown root file1.txt
```

```
└──(root㉿kali)-[~/home/kali/Desktop]
    └──# ls -l
```

The screenshot shows a terminal window titled 'Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox'. The terminal session is as follows:

```

File Machine View Input Devices Help
File Actions Edit View Help
root@kali:~/home/kali/Desktop
└──# chmod 777 file1.txt
root@kali:~/home/kali/Desktop
└──# ls -l
total 24
drwxr-xr-x 1 kali kali 40 May 22 06:16 dummy1.txt
-rw-r--r-- 1 kali kali 18 May 22 06:11 dummy.txt
-rwxrwxrwx 1 kali kali 29 May 22 05:44 file1.txt
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
drwxr-xr-x 2 kali kali 4096 May 22 05:19 folder1
drwxr-xr-x 2 kali kali 4096 May 21 15:44 newfolder
root@kali:~/home/kali/Desktop
└──# sudo su root
We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:
#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.
[sudo] password for kali:
Sorry, try again.
[sudo] password for kali:
sudo: 3 incorrect password attempts
root@kali:~/home/kali/Desktop
└──# sudo su root
We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:
#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.
[sudo] password for kali:
root@kali:~/home/kali/Desktop
└──# chown root file1.txt
root@kali:~/home/kali/Desktop
└──# ls -l
total 24
drwxr-xr-x 1 kali kali 40 May 22 06:16 dummy1.txt
-rw-r--r-- 1 kali kali 18 May 22 06:11 dummy.txt
-rwxrwxrwx 1 root kali 29 May 22 05:44 file1.txt
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
drwxr-xr-x 2 kali kali 4096 May 22 05:19 folder1
drwxr-xr-x 2 kali kali 4096 May 21 15:44 newfolder
root@kali:~/home/kali/Desktop
└──# 40C
Partly sunny

```

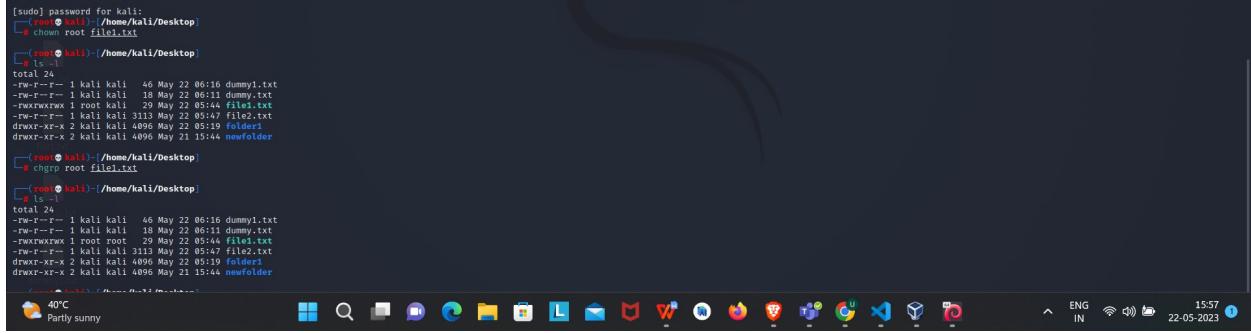
The terminal shows the user attempting to change file ownership and permissions, receiving a root prompt, and then successfully changing the ownership of 'file1.txt' to root. The desktop environment at the bottom of the screen shows it's a partly sunny day at 40C.

R) chgrp: Change file group

```
└──(root㉿kali)-[~/home/kali/Desktop]
    └──# chgrp root file1.txt
```

└─(root㉿kali)-[~/Desktop]

└─# ls -l



```
[sudo] password for kali:
[root@kali ~]# /home/kali/Desktop
[root@kali ~]# chmod root filelist.txt
[root@kali ~]# ls -l
total 24
-rw-r--r-- 1 kali kali 46 May 22 06:16 dummy1.txt
-rw-r--r-- 1 kali kali 18 May 22 06:11 dummy.txt
-rwxrwxrwx 1 kali kali 12 May 22 05:47 file1.txt
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
drwxr-xr-x 2 kali kali 4096 May 22 05:19 folder1
drwxr-xr-x 2 kali kali 4096 May 21 15:44 newfolder
[root@kali ~]# cdnpr root filelist.txt
[root@kali ~]# ls -l
total 24
-rw-r--r-- 1 kali kali 46 May 22 06:16 dummy1.txt
-rw-r--r-- 1 kali kali 18 May 22 06:11 dummy.txt
-rwxrwxrwx 1 root root 29 May 22 05:44 file1.txt
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
drwxr-xr-x 2 kali kali 4096 May 22 05:19 folder1
drwxr-xr-x 2 kali kali 4096 May 21 15:44 newfolder
40C Partly sunny 15:57 22-05-2023
```

File Compression and Archiving:

Commands, Output, Screenshots::

S) tar: Archive files

└─(kali㉿kali)-[~/Desktop]

└─\$ tar -cvf archive.tar dummy1.txt dummy.txt

dummy1.txt

dummy.txt

└─(kali㉿kali)-[~/Desktop]

└─\$ tar -xvf archive.tar

dummy1.txt

dummy.txt

└─(kali㉿kali)-[~/Desktop]

└─\$ tar -tvf archive.tar

-rw-r--r-- kali/kali 46 2023-05-22 06:16 dummy1.txt

-rw-r--r-- kali/kali 18 2023-05-22 06:11 dummy.txt

A screenshot of a terminal window titled "kali@kali: ~/Desktop". The terminal displays the following commands and their outputs:

```
(kali㉿kali)-[~/Desktop]
$ tar -cvf archive.tar dummy1.txt dummy.txt
dummy1.txt
dummy.txt

(kali㉿kali)-[~/Desktop]
$ tar -xvf archive.tar
dummy1.txt
dummy.txt

(kali㉿kali)-[~/Desktop]
$ tar -tvf archive.tar
-rw-r--r-- kali/kali      46 2023-05-22 06:16 dummy1.txt
-rw-r--r-- kali/kali      18 2023-05-22 06:11 dummy.txt

(kali㉿kali)-[~/Desktop]
$
```

T) gzip: Compress files

```
(kali㉿kali)-[~/Desktop/folder1]
$ ls
file1 file2.txt
```

```
(kali㉿kali)-[~/Desktop/folder1]
$ ls -ltr
total 4
-rw-r--r-- 1 kali kali  0 May 22 05:17 file1
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
```

```
(kali㉿kali)-[~/Desktop/folder1]
$ gzip file2.txt
```

```
(kali㉿kali)-[~/Desktop/folder1]
$ ls -ltr
total 4
-rw-r--r-- 1 kali kali  0 May 22 05:17 file1
```

```
-rw-r--r-- 1 kali kali 1510 May 22 05:47 file2.txt.gz
```

The screenshot shows a Kali Linux desktop environment. At the top, there is a terminal window titled 'kali@kali: ~/Desktop/folder1' with the following command history:

```

File Actions Edit View Help
.
(kali㉿kali)-[~/Desktop/folder1]
file1  file2.txt
(kali㉿kali)-[~/Desktop/folder1]
ls -ltr
total 4
-rw-r--r-- 1 kali kali 0 May 22 05:17 file1
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
(kali㉿kali)-[~/Desktop/folder1]
$ gzip file2.txt
(kali㉿kali)-[~/Desktop/folder1]
ls -ltr
total 4
-rw-r--r-- 1 kali kali 0 May 22 05:17 file1
-rw-r--r-- 1 kali kali 1510 May 22 05:47 file2.txt.gz
(kali㉿kali)-[~/Desktop/folder1]
$ 
```

Below the terminal is a file manager window titled 'folder1'. It shows a directory structure with 'Places' (Computer, kali, Desktop, Trash, Documents, Music, Pictures, Videos, Downloads) and 'Devices' (File System). Inside the 'Desktop' folder, there are two files: 'file1' and 'file2.txt.gz'. The status bar at the bottom indicates '2 files 1.5 KB (A 510 bytes) Free space 63.8 GB'.

U) **unzip**: Extract files from a ZIP archive

```
└──(kali㉿kali)-[~/Desktop/folder1]
```

```
└──$ gunzip file2.txt
```

```
└──(kali㉿kali)-[~/Desktop/folder1]
```

```
└──$ ls -ltr
```

total 4

```
-rw-r--r-- 1 kali kali 0 May 22 05:17 file1
```

```
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
```

```
└──(kali㉿kali)-[~/Desktop/folder1]
```

```
└──$
```

The screenshot shows a Kali Linux desktop environment. In the top-left corner, there is a terminal window with the following command history:

```
(kali㉿kali)-[~/Desktop/folder1]
└─$ gunzip file2.txt
(kali㉿kali)-[~/Desktop/folder1]
└─$ ls -ltr
total 4
-rw-r--r-- 1 kali kali 0 May 22 05:17 file1
-rw-r--r-- 1 kali kali 3113 May 22 05:47 file2.txt
(kali㉿kali)-[~/Desktop/folder1]
```

Below the terminal is a file manager window titled "folder1". The window shows a directory structure with "Places" on the left containing "Computer", "kali", "Desktop", "Trash", "Documents", "Music", "Pictures", "Videos", and "Downloads". On the right, there are two files: "file1" and "file2.txt".

The desktop bar at the bottom includes icons for various applications like Terminal, Web browser, and File Manager. It also displays system information such as "ENG IN", signal strength, battery level, date and time ("16:05 22-05-2023"), and a notification count of 1.

Process Management:

Commands, Output, Screenshots::

V) ps: List running processes

```
(kali㉿kali)-[~]
└─$ ps
 PID TTY      TIME CMD
 28282 pts/0    00:00:01 zsh
 35957 pts/0    00:00:00 ps
```

The screenshot shows a Kali Linux terminal window with the following command history:

```
(kali㉿kali)-[~]
└─$ ps
 PID TTY      TIME CMD
 28282 pts/0    00:00:01 zsh
 35957 pts/0    00:00:00 ps
(kali㉿kali)-[~]
```

W) top: Display real-time system information and processes

└──(kali㉿ kali)-[~]

└──\$ top

```
top - 06:44:46 up 2:28, 1 user, load average: 0.11, 0.07, 0.08
Tasks: 147 total, 1 running, 146 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0.9 us, 1.4 sy, 0.0 ni, 97.4 id, 0.0 wa, 0.0 hi, 0.3 si, 0.0 st
Mem: 1982.0 total, 343.5 free, 638.6 used, 999.8 buff/cache
Swap: 975.0 total, 975.0 free, 0.0 used. 1324.5 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND
491 root 20 0 580269 182340 77156 S 3.0 9.4 1:59.65 Xorg
778 root 20 0 100000 100000 0 R 0.0 0.0 0:00:00 kworker/u:0-0
869 kali 20 0 355264 33864 20896 S 0.7 1.7 1:04:40 panel-13-upgra
873 kali 20 0 424700 29524 19912 S 0.7 1.5 0:31:02 panel-15-genmon
874 kali 20 0 92180 93576 65748 S 0.4 1.6 0:46:00 xfwm4
12357 root 20 0 100000 100000 0 R 0.0 0.0 0:00:00 kworker/1:2-mm_percpu_wq
28279 kali 20 0 412592 85764 67698 S 0.3 4.2 0:03:74 qterminal
36170 kali 20 0 10224 3856 3292 R 0.3 0.2 0:00:06 top
4016 root 20 0 164592 10740 7952 S 0.0 0.0 0:01:02 kworker/u:0-0
2 root 0 20 0 0 0 0 I 0.0 0.0 0:00:00 kthreadd
3 root 0 20 0 0 0 I 0.0 0.0 0:00:00 rcu_gp
4 root 0 20 0 0 0 I 0.0 0.0 0:00:00 rcu_par_gp
6 root 0 20 0 0 0 I 0.0 0.0 0:00:00 kworker/u:0-0-events_highpri
8 root 0 20 0 0 0 I 0.0 0.0 0:00:00 rcu_par_gp_wq
9 root 20 0 0 0 0 S 0.0 0.0 0:00:00 rcu_tasks_rude_
10 root 20 0 0 0 0 S 0.0 0.0 0:00:00 rcu_tasks_trace
11 root 20 0 0 0 0 S 0.0 0.0 0:00:00 ksoftirqd_0
12 root 20 0 0 0 0 S 0.0 0.0 0:07.82 rcu_sched
13 root rt 0 0 0 0 S 0.0 0.0 0:00:04 migration/0
15 root 20 0 0 0 0 S 0.0 0.0 0:00:00 cpuhp/0
16 root 20 0 0 0 0 S 0.0 0.0 0:00:00 cpuhp/1
17 root rt 0 0 0 0 S 0.0 0.0 0:00:00 migration/1
18 root 20 0 0 0 0 S 0.0 0.0 0:01:96 ksoftirqd/1
20 root 0 20 0 0 0 I 0.0 0.0 0:00:00 kworker/1:0H-events_highpri
23 root 20 0 0 0 0 S 0.0 0.0 0:00:00 ksoftirqd/0
24 root 0 20 0 0 0 I 0.0 0.0 0:00:00 netns
25 root 0 20 0 0 0 I 0.0 0.0 0:00:00 inet_frag_wq
26 root 20 0 0 0 0 S 0.0 0.0 0:00:00 kaudiod
27 root 20 0 0 0 0 S 0.0 0.0 0:00:00 kworker/u:0-0
28 root 20 0 0 0 0 S 0.0 0.0 0:00:00 oom_reaper
29 root 0 20 0 0 0 I 0.0 0.0 0:00:00 writeback
30 root 20 0 0 0 0 S 0.0 0.0 0:02:08 kcompactd0
31 root 25 0 0 0 0 S 0.0 0.0 0:00:00 kcompactd1
32 root 39 19 0 0 0 S 0.0 0.0 0:00:90 khugepaged
52 root 0 20 0 0 0 I 0.0 0.0 0:00:00 kintegrityd
53 root 0 20 0 0 0 I 0.0 0.0 0:00:00 kworker/u:0-0
54 root 0 20 0 0 0 I 0.0 0.0 0:00:00 blkcg_punt_bio
55 root 0 20 0 0 0 I 0.0 0.0 0:00:00 tpm_dev_wq
56 root 0 20 0 0 0 I 0.0 0.0 0:00:00 edac-poller
```

X) kill: Terminate processes

└──(kali㉿ kali)-[~]

└──\$ kill 36513

Y) bg: Run processes in the background

└──(kali㉿ kali)-[~]

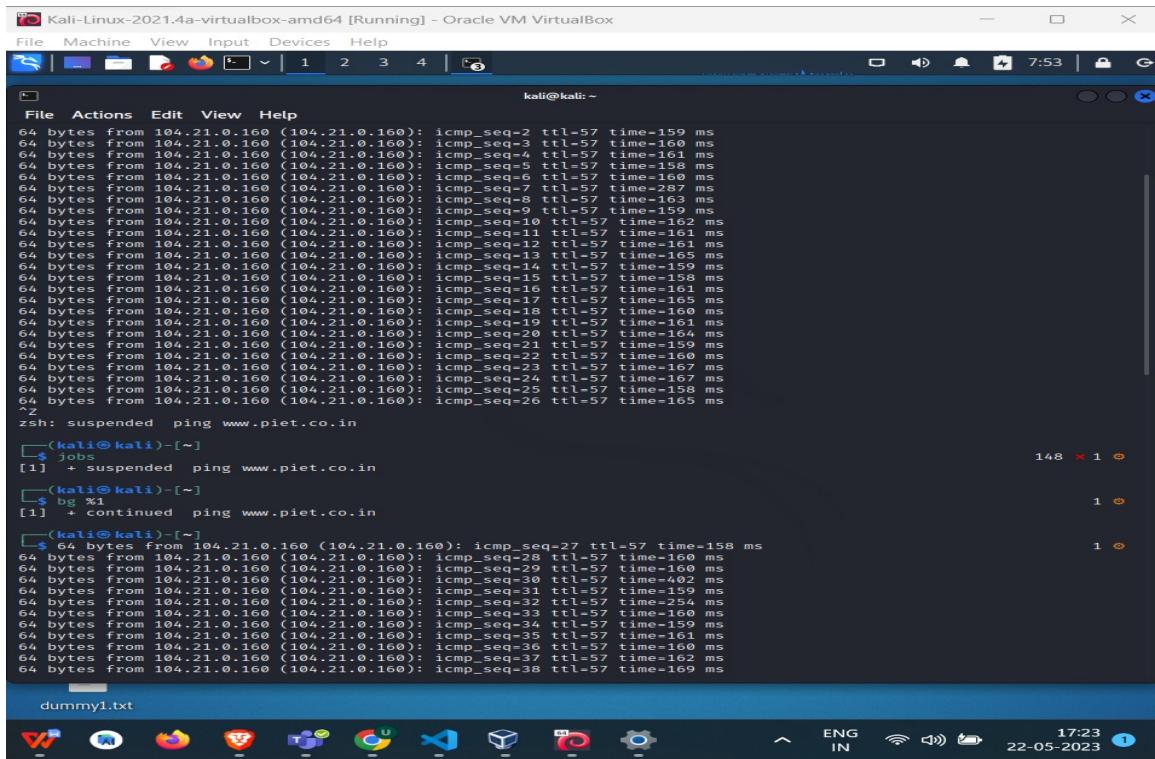
└──\$ jobs

148 □ 1 ⚙

[1] + suspended ping www.piet.co.in

└──(kali㉿ kali)-[~]

└\$ bg
 1 ⚙
 [1] + continued ping www.piet.co.in



```

Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
File Machine View Input Devices Help
kali@kali: ~

File Actions Edit View Help
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=2 ttl=57 time=159 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=3 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=4 ttl=57 time=159 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=5 ttl=57 time=158 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=6 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=7 ttl=57 time=287 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=8 ttl=57 time=163 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=9 ttl=57 time=159 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=10 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=11 ttl=57 time=161 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=12 ttl=57 time=161 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=13 ttl=57 time=165 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=14 ttl=57 time=157 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=15 ttl=57 time=158 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=16 ttl=57 time=161 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=17 ttl=57 time=165 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=18 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=19 ttl=57 time=167 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=20 ttl=57 time=164 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=21 ttl=57 time=159 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=22 ttl=57 time=166 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=23 ttl=57 time=167 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=24 ttl=57 time=162 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=25 ttl=57 time=158 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=26 ttl=57 time=165 ms
^Z
zsh: suspended ping www.piet.co.in
[~] $ jobs
[1] + suspended ping www.piet.co.in
[~] $ bg %1
[1] + continued ping www.piet.co.in
[~] $ 64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=27 ttl=57 time=158 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=28 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=29 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=30 ttl=57 time=402 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=31 ttl=57 time=161 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=32 ttl=57 time=154 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=33 ttl=57 time=160 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=34 ttl=57 time=159 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=35 ttl=57 time=161 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=36 ttl=57 time=161 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=37 ttl=57 time=162 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=38 ttl=57 time=169 ms

```

Z) fg: Bring background processes to the foreground
 zsh: suspended ping www.piet.co.in

└─(kali㉿ kali)-[~]
 └\$ fg
 1 ⚙
 [1] + continued ping www.piet.co.in

```

ping www.piet.co.in
PING www.piet.co.in (172.67.151.69) 56(84) bytes of data.
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=1 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=2 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=3 ttl=57 time=163 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=4 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=5 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=6 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=7 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=8 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=9 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=10 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=11 ttl=57 time=163 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=12 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=13 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=14 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=15 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=16 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=17 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=18 ttl=57 time=170 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=19 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=20 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=21 ttl=57 time=159 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=22 ttl=57 time=173 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=23 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=24 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=25 ttl=57 time=168 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=26 ttl=57 time=163 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=27 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=28 ttl=57 time=162 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=29 ttl=57 time=159 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=30 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=31 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=32 ttl=57 time=164 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=33 ttl=57 time=161 ms
25: suspended ping www.piet.co.in
  (kali㉿kali)-[~]
$ fg
1: continued ping www.piet.co.in
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=34 ttl=57 time=175 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=35 ttl=57 time=171 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=36 ttl=57 time=161 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=37 ttl=57 time=160 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=38 ttl=57 time=240 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=39 ttl=57 time=190 ms
64 bytes from 172.67.151.69 (172.67.151.69): icmp_seq=40 ttl=57 time=160 ms
  dummy1.txt
  148 × 1
  17:26 22-05-2023
  ENG IN
  1

```

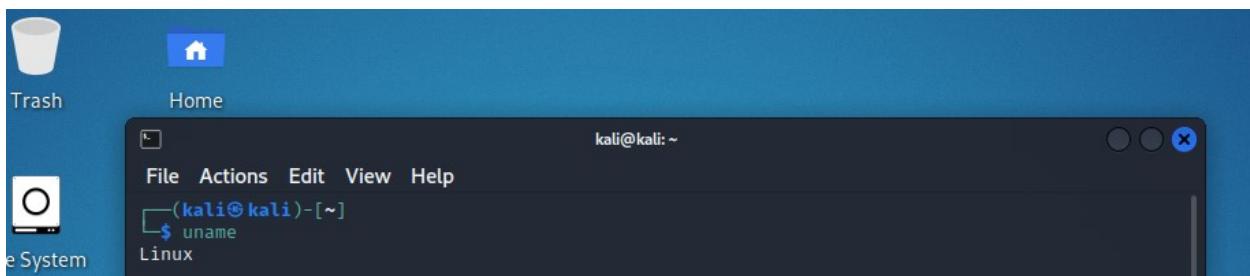
System Information:

Commands, Output, Screenshots::

AA) uname: Print system information

- └── (kali㉿kali)-[~]
- └── \$ uname

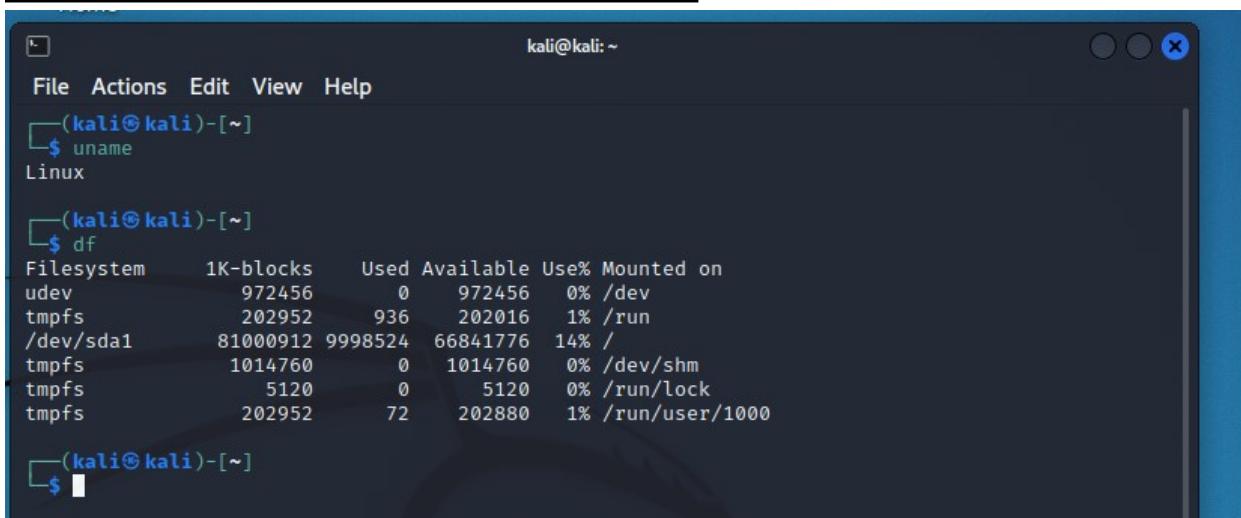
Linux



AB) df: Display disk space usage

```
└──(kali㉿ kali)-[~]
└─$ df
```

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
udev	972456	0	972456	0%	/dev
tmpfs	202952	936	202016	1%	/run
/dev/sda1	81000912	9998524	66841776	14%	/
tmpfs	1014760	0	1014760	0%	/dev/shm
tmpfs	5120	0	5120	0%	/run/lock
tmpfs	202952	72	202880	1%	/run/user/1000



The screenshot shows a terminal window titled 'kali@kali: ~'. The window contains the following text:

```
File Actions Edit View Help
└──(kali㉿ kali)-[~]
└─$ uname
Linux

└──(kali㉿ kali)-[~]
└─$ df
Filesystem      1K-blocks      Used   Available  Use% Mounted on
udev              972456        0    972456     0% /dev
tmpfs             202952       936    202016     1% /run
/dev/sda1         81000912  9998524  66841776    14% /
tmpfs             1014760        0   1014760     0% /dev/shm
tmpfs               5120        0      5120     0% /run/lock
tmpfs             202952       72    202880     1% /run/user/1000

└──(kali㉿ kali)-[~]
└─$ █
```

AC) free: Display memory usage

```
└──(kali㉿ kali)-[~]
└─$ free
```

	total	used	free	shared	buff/cache	available
Mem:	2029520	593860	479212	36364	956448	1211564
Swap:	998396	5156	993240			

```
└─(kali㉿kali)-[~]
$ free
      total        used        free      shared  buff/cache   available
Mem:   2029520      593860     479212      36364      956448     1211564
Swap:  998396       5156    993240
```

AD) uptime: Show system uptime

```
└─(kali㉿kali)-[~]
```

```
└─$ uptime
```

08:00:37 up 3:44, 1 user, load average: 0.07, 0.11, 0.09

```
└─(kali㉿kali)-[~]
└─$ uptime
 08:00:37 up 3:44, 1 user, load average: 0.07, 0.11, 0.09
```

AE) who: Display logged-in users

```
└─(kali㉿kali)-[~]
```

```
└─$ who
```

kali tty7 2023-05-19 09:59 (:0)

```
└─(kali㉿kali)-[~]
└─$ who
kali    tty7          2023-05-19 09:59 (:0)
```

AF) w: Display logged-in users and their activities

```
└─(kali㉿kali)-[~]
```

```
└─$ w
```

08:00:44 up 3:44, 1 user, load average: 0.06, 0.11, 0.09

USER	TTY	FROM	LOGIN@	IDLE	JCPU	PCPU
------	-----	------	--------	------	------	------

WHAT

kali tty7 :0 Fri09 2days 2:34 0.69s xfce4-session

```
└─(kali㉿kali)-[~]
└─$ w
 08:00:44 up 3:44, 1 user, load average: 0.06, 0.11, 0.09
USER     TTY     FROM           LOGIN@     IDLE     JCPU     PCPU WHAT
kali     tty7     :0           Fri09     2days   2:34    0.69s xfce4-session
```

Networking:

Commands, Output, Screenshots::

A) ifconfig: Configure network interfaces

```
└──(kali㉿ kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu
1500
          inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
          inet6 fe80::a00:27ff:fe50:4c14  prefixlen 64  scopeid 0x20<link>
            ether 08:00:27:50:4c:14  txqueuelen 1000  (Ethernet)
              RX packets 18001  bytes 22948183 (21.8 MiB)
              RX errors 0  dropped 0  overruns 0  frame 0
              TX packets 4867  bytes 542000 (529.2 KiB)
              TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
          inet 127.0.0.1  netmask 255.0.0.0
          inet6 ::1  prefixlen 128  scopeid 0x10<host>
            loop  txqueuelen 1000  (Local Loopback)
              RX packets 20  bytes 1000 (1000.0 B)
              RX errors 0  dropped 0  overruns 0  frame 0
              TX packets 20  bytes 1000 (1000.0 B)
              TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
```

```
kali@kali: ~
File Actions Edit View Help
[(kali㉿kali)-[~]]$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
        inet6 fe80::a00:27ff:fe50:4c14 prefixlen 64 scopeid 0x20<link>
            ether 08:00:27:50:4c:14 txqueuelen 1000 (Ethernet)
            RX packets 18001 bytes 22948183 (21.8 MiB)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 4867 bytes 542000 (529.2 KiB)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
        inet6 ::1 prefixlen 128 scopeid 0x10<host>
            loop txqueuelen 1000 (Local Loopback)
            RX packets 20 bytes 1000 (1000.0 B)
            RX errors 0 dropped 0 overruns 0 frame 0
            TX packets 20 bytes 1000 (1000.0 B)
            TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

AH) ping: Send ICMP echo requests to a network host

```
[(kali㉿kali)-[~]]$ ping 8.8.8.8
```

```
[(kali㉿kali)-[~]]$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=117 time=85.4 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=117 time=45.4 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=117 time=87.6 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=117 time=70.3 ms
```

AI) ssh: Securely connect to a remote system

```
[(kali㉿kali)-[~]]$ ssh user@remote_host
```

```
(kali㉿kali)-[~]
└─$ ssh user@remote_host
```

AJ) *scp: Securely copy files between systems*

```
(kali㉿kali)-[~]
└─$ scp local_file user@remote_host:remote_directory
```

```
(kali㉿kali)-[~]
└─$ scp local_file user@remote_host:remote_directory
```

AK) *wget: Download files from the web*

```
(kali㉿kali)-[~]
└─$ wget factorpad.com/returns.txt -O video85b.txt
```

The screenshot shows a Kali Linux desktop environment. In the top-left corner, there is a terminal window titled 'kali' with the command 'wget factorpad.com/returns.txt -O video85b.txt' being run. The output of the wget command is displayed, showing the download progress and completion message. In the bottom-right corner, there is a file manager window titled 'kali' showing a file structure. The file 'video85b.txt' is visible in the 'Downloads' folder.

```
(kali㉿kali)-[~]
└─$ wget factorpad.com/returns.txt -O video85b.txt
--2023-05-22 08:17:57-- http://factorpad.com/returns.txt
Resolving factorpad.com (factorpad.com)... 104.154.217.170
Connecting to factorpad.com (factorpad.com)|104.154.217.170|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: https://factorpad.com/returns.txt [following]
--2023-05-22 08:17:58-- https://factorpad.com/returns.txt
Connecting to factorpad.com (factorpad.com)|104.154.217.170|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4080 (4.0K) [text/plain]
Saving to: 'video85b.txt'

video85b.txt          100%[=====]   3.98K  --.-KB/s   in 0s

2023-05-22 08:17:59 (103 MB/s) - 'video85b.txt' saved [4080/4080]

(kali㉿kali)-[~]
```

System Administration:

Commands, Output, Screenshots::

A) sudo: Execute commands with superuser privileges

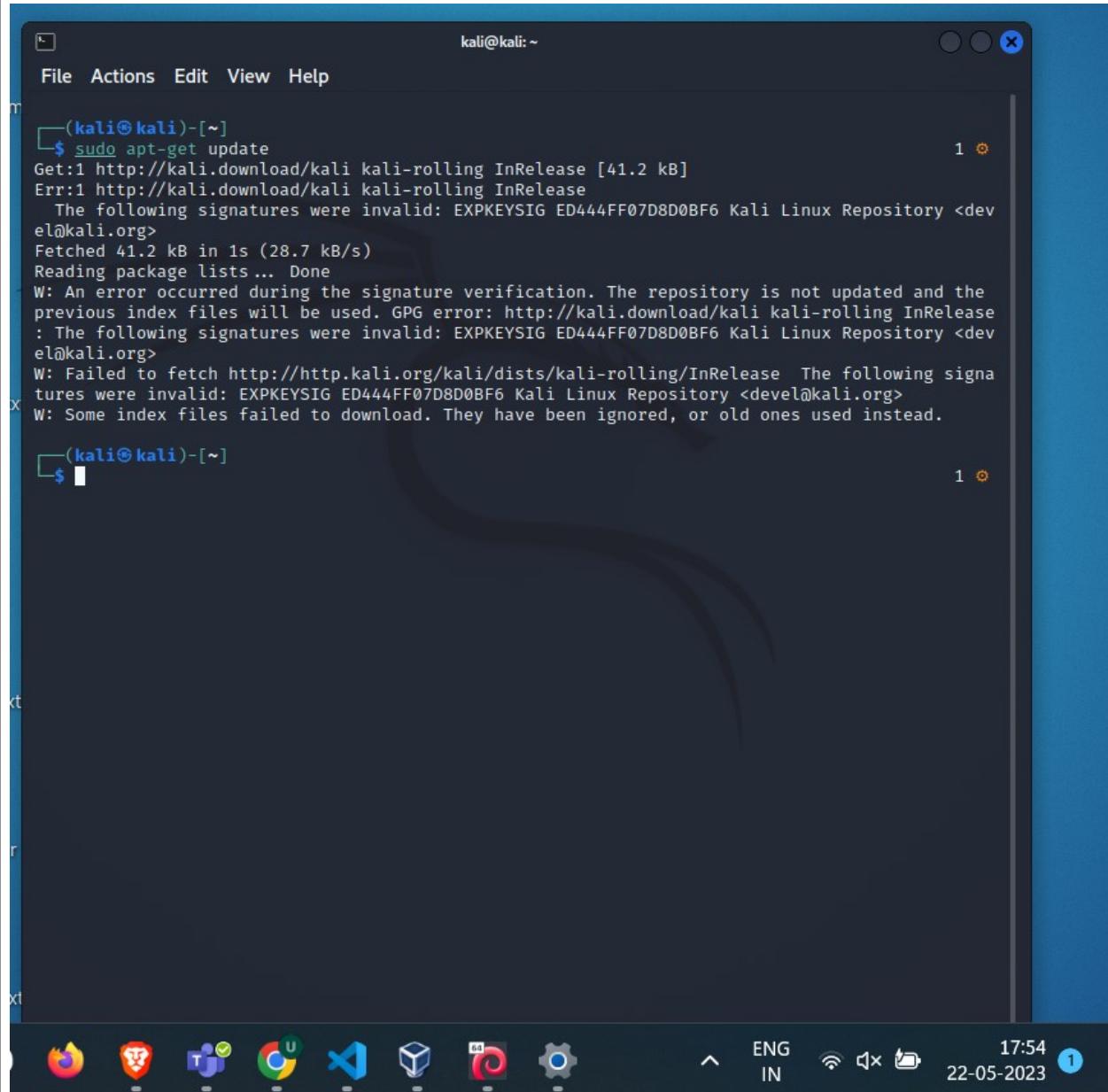
```
└─(kali㉿ kali)-[~]
  └─$ sudo apt install gedit
[sudo] password for kali:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
```

```
(kali㉿ kali)-[~]
$ sudo apt install gedit
[sudo] password for kali:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  docbook-xml fonts-dejavu gedit-common gir1.2-gtksource-4 gir1.2-peas-1.0
  libgtksourceview-4-0 libgtksourceview-4-common libpeas-1.0-0 libpeas-common libyelp0
  sgml-base sgml-data xml-core yelp yelp-xsl
Suggested packages:
  docbook docbook-dsssl docbook-xsl docbook-defguide gedit-plugins sgml-base-doc perlsgml
  w3-recs opensp debhelper
The following NEW packages will be installed:
  docbook-xml fonts-dejavu gedit gedit-common gir1.2-gtksource-4 gir1.2-peas-1.0
  libgtksourceview-4-0 libgtksourceview-4-common libpeas-1.0-0 libpeas-common libyelp0
  sgml-base sgml-data xml-core yelp yelp-xsl
0 upgraded, 16 newly installed, 0 to remove and 377 not upgraded.
Need to get 4,705 kB of archives.
After this operation, 29.3 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

AM) apt-get: Package management for Debian-based distributions

└─(kali㉿ kali)-[~]

└─\$ sudo apt-get update



The screenshot shows a terminal window titled "kali@kali: ~". The user has run the command `sudo apt-get update`. The output indicates that the repository was not updated due to signature verification errors. The terminal window has a dark blue background with light blue text. The bottom of the screen shows the Kali Linux desktop environment with various icons in the dock.

```
kali@kali: ~
File Actions Edit View Help
(kali㉿ kali)-[~]
$ sudo apt-get update
Get:1 http://kali.download/kali kali-rolling InRelease [41.2 kB]
Err:1 http://kali.download/kali kali-rolling InRelease
  The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
Fetched 41.2 kB in 1s (28.7 kB/s)
Reading package lists... Done
W: An error occurred during the signature verification. The repository is not updated and the previous index files will be used. GPG error: http://kali.download/kali kali-rolling InRelease
: The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
W: Failed to fetch http://http.kali.org/kali/dists/kali-rolling/InRelease  The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
W: Some index files failed to download. They have been ignored, or old ones used instead.

(kali㉿ kali)-[~]
$
```

A) yum: Package management for Red Hat-based distributions

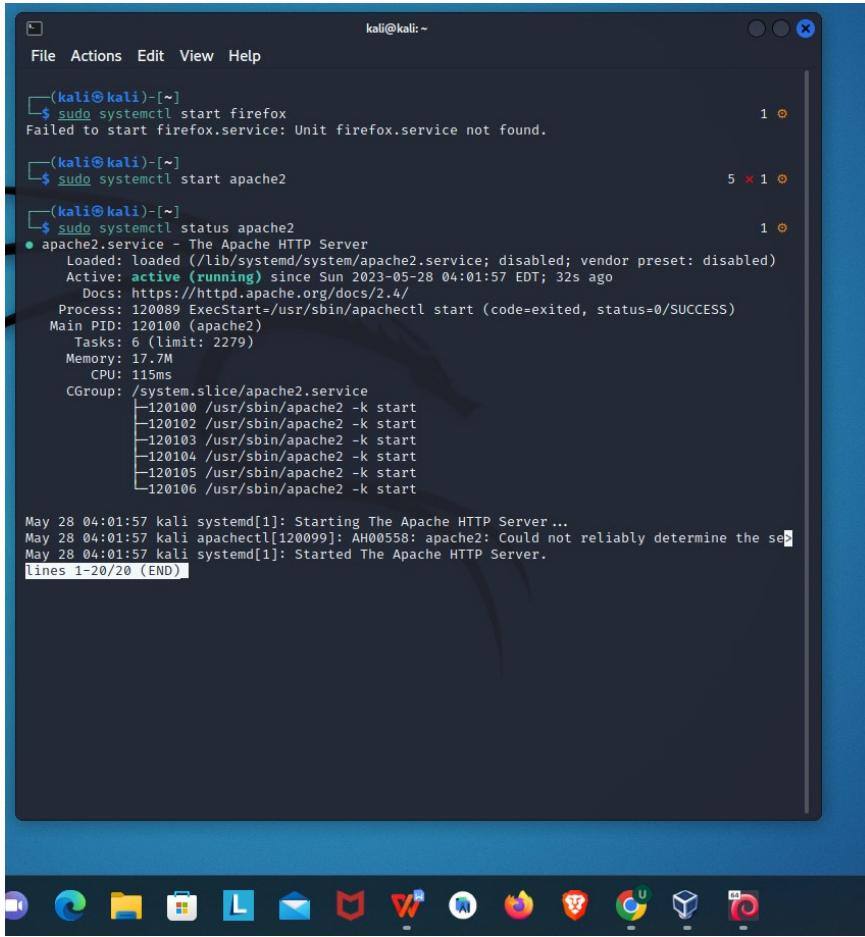
sudo yum install httpd

sudo yum remove httpd

└─(kali㉿kali)-[~]

└─\$ sudo yum install httpd

A) systemctl: Manage system services



The screenshot shows a terminal window titled "File Actions Edit View Help". The command history at the top includes:

```
—(kali㉿kali)-[~]
$ sudo systemctl start firefox
Failed to start firefox.service: Unit firefox.service not found.
```

Below this, the user runs:

```
—(kali㉿kali)-[~]
$ sudo systemctl start apache2
5 × 1 ⏎
```

Then, the user checks the status of the Apache2 service:

```
—(kali㉿kali)-[~]
$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; disabled; vendor preset: disabled)
     Active: active (running) since Sun 2023-05-28 04:01:57 EDT; 32s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 120089 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 120100 (apache2)
      Tasks: 6 (limit: 2279)
     Memory: 17.7M
        CPU: 115ms
       CGroup: /system.slice/apache2.service
           ├─120100 /usr/sbin/apache2 -k start
           ├─120102 /usr/sbin/apache2 -k start
           ├─120103 /usr/sbin/apache2 -k start
           ├─120104 /usr/sbin/apache2 -k start
           ├─120105 /usr/sbin/apache2 -k start
           └─120106 /usr/sbin/apache2 -k start
```

Logs at the bottom show the server starting:

```
May 28 04:01:57 kali systemd[1]: Starting The Apache HTTP Server...
May 28 04:01:57 kali apachectl[120099]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.0.1 for Port 80
May 28 04:01:57 kali systemd[1]: Started The Apache HTTP Server.
lines 1-20/20 (END).
```

AP) crontab: Schedule recurring tasks

```

kali㉿kali:~$ nano 5.9 /tmp/crontab.F87Zac/crontab
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezone.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m. every week:
# 0 5 * * * tar -czf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow   command

```

[Read 23 lines]

File Actions Edit View Help

Help Write Out Where Is Cut Execute Location

Exit Read File Replace Copy Paste Justify Go To Line

AQ) useradd: Add a new user

```

kali㉿kali:~$ sudo useradd test1
kali㉿kali:~$ sudo passwd test1
New password:
Retype new password:
passwd: password updated successfully

```

(kali㉿kali)-[~]

File Actions Edit View Help

strongswan:x:105:65534::/var/lib/strongswan:/usr/sbin/nologin

systemd-timesync:x:106:112:system Time Synchronization,,,:/run/systemd:/usr/sbin/nologin

redsocks:x:107:113::/var/run/redsocks:/usr/sbin/nologin

rwho:x:108:114::/var/run/rwho:/usr/sbin/nologin

lpd:x:109:115::/var/run/lpd:/usr/sbin/nologin

messagebus:x:110:114::/none/nownonexistent:/usr/sbin/nologin

miredo:x:111:115::/var/run/miredo:/usr/sbin/nologin

_rpc:x:112:115::/run/rpcbind:/usr/sbin/nologin

usbmux:x:113:116:usb mux,,,:/var/lib/usbmux:/usr/sbin/nologin

tcpdump:x:114:120::/none/nownonexistent:/usr/sbin/nologin

rtkit:x:115:121::/var/run/rtkit:/usr/sbin/nologin

dnsmasq:x:116:125::/run/dnsmasq:/bin/nologin

dnsmasq:x:117:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin

statd:x:118:65534::/var/lib/nfs:/usr/sbin/nologin

avahi:x:119:125:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin

stunnel4:x:120:126::/var/run/stunnel4:/usr/sbin/nologin

Dovecot:x:121:127::/var/run/dovecot:/usr/sbin/nologin

Speech-dispatcher:x:122:20:speech Dispatcher,,,:/run/speech-dispatcher:/bin/false

sshd:x:123:128::/none/nownonexistent:/usr/sbin/nologin

postgresql:x:124:129:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash

nm-openvpn:x:125:130:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin

nm-openvpn:x:126:131:NetworkManager OpenConnect plugin,,,:/var/lib/NetworkManager:/usr/sbin/nologin

pulse:x:127:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin

sa:!:128:135::/var/lib/saned:/usr/sbin/nologin

inetutils:x:129:137::/var/lib/inetutils:/usr/sbin/nologin

lightdm:x:130:138:light Display Manager:/var/lib/lightdm:/bin/false

colord:x:131:139:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin

geoclue:x:132:140::/var/lib/geoclue:/usr/sbin/nologin

king-phisher:x:133:141::/var/lib/king-phisher:/usr/sbin/nologin

kuang:x:1000:1000:Kuang,,,:/home/kuang:/bin/29

systemd-coredump:x:999:999:systemd Core Dumper:/usr/sbin/nologin

testx:x:1001:1001::/home/test:/bin/sh

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AR) passwd: Change user password

The screenshot shows a terminal window titled 'kali@kali:~' with the following session log:

```
File Actions Edit View Help
strongswan:x:105:65534::/var/lib/strongswan:/usr/sbin/nologin
redsocks:x:107:113::/var/run/redsocks:/usr/sbin/nologin
rwhod:x:108:65534::/var/spool/rwho:/usr/sbin/nologin
iodine:x:109:65534::/run/iodine:/usr/sbin/nologin
messagebus:x:110:114::/nonexistent:/usr/sbin/nologin
miredo:x:111:65534::/var/run/miredo:/usr/sbin/nologin
 rpc:x:112:65534::/run/rpcbind:/usr/sbin/nologin
usbmux:x:113:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
tcpdump:x:114:120::/nonexistent:/usr/sbin/nologin
rtkit:x:115:121:RealtimeKit,,,:/proc:/usr/sbin/nologin
sshd:x:116:65534::/run/sshd:/usr/sbin/nologin
dnsmasq:x:117:65534::dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
statd:x:118:65534::/var/lib/nfs:/usr/sbin/nologin
avahi:x:119:125:Avahi mDNS daemon,,,:/run/avahi-daemon:/usr/sbin/nologin
stunnel4:x:120:126::/var/run/stunnel4:/usr/sbin/nologin
Debian-sysv:x:121:127::/var/lib/snmp:/bin/false
speech-dispatcher:x:122:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false
sshd:x:123:128::/nonexistent:/usr/sbin/nologin
postgres:x:124:129:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash
nm-openvpn:x:125:130:NetworkManager OpenVPN,,,:/var/lib/openvpn/chroot:/usr/sbin/nologin
nm-openconnect:x:126:131:NetworkManager OpenConnect plugin,,,:/var/lib/NetworkManager:/usr/sbin/nologin
pulse:x:127:132:PulseAudio daemon,,,:/run/pulse:/usr/sbin/nologin
saned:x:128:135::/var/lib/saned:/usr/sbin/nologin
inetutils:x:129:137::/var/lib/inetutils:/usr/sbin/nologin
lightdm:x:130:138:Light Display Manager:/var/lib/lightdm:/bin/false
colord:x:131:139:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
geoclue:x:132:140::/var/lib/geoclue:/usr/sbin/nologin
king-phisher:x:133:141::/var/lib/king-phisher:/usr/sbin/nologin
kali:x:1000:1000:Kali,,,:/home/kali:/usr/bin/zsh
systemd-coredump:x:999:999:systemd Core Dumper:/usr/sbin/nologin
test:x:1001:1001::/home/test:/bin/sh

---(kali㉿kali)-[~]
└─$ sudo useradd test1

---(kali㉿kali)-[~]
└─$ sudo passwd test1
New password:
Retype new password:
passwd: password updated successfully

---(kali㉿kali)-[~]
└─$
```

The terminal shows the creation of a new user 'test1' and the subsequent change of its password. The desktop environment at the bottom includes icons for file manager, browser, terminal, and various system applications.

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ASSESSMENT1 FILE LINK

<https://drive.google.com/file/d/1RI6mKVLmWyWyuw7YtcMTkPdoKqDNEH-j/view?usp=sharing>

ASSESSMENT2 FILE LINK

<https://drive.google.com/file/d/1BDK14l9HdQwdZxHHmMugpM0lZqCUQcWV/view?usp=sharing>

FOLDER LINK

https://drive.google.com/drive/folders/1M65vhtpONkvHRYGQ0yljcfU_wgKe1hDu?usp=sharing