

ASSESSMENT-1

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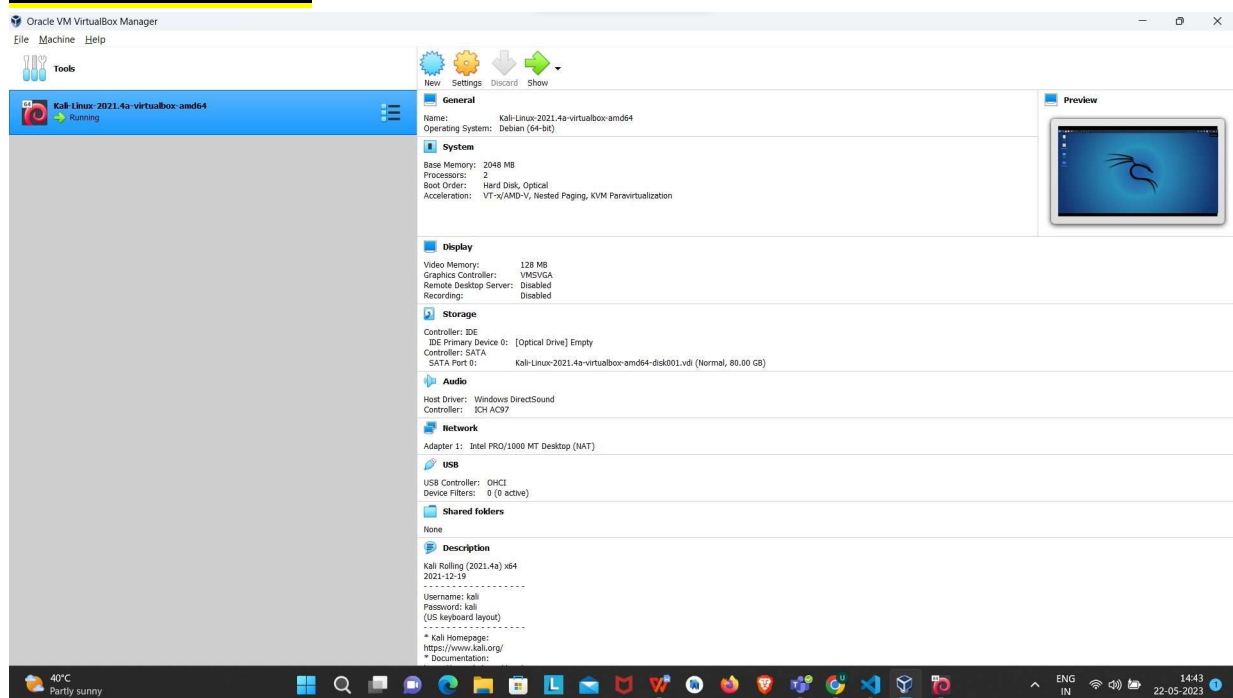
Title: Linux Command List Assessment

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.

PLATFORM USED



File and Directory Operations:

Commands, Output, Screenshots::

A) ls: List files and directories

```
(kali㉿kali)-[~]
```

```
$ ls
```

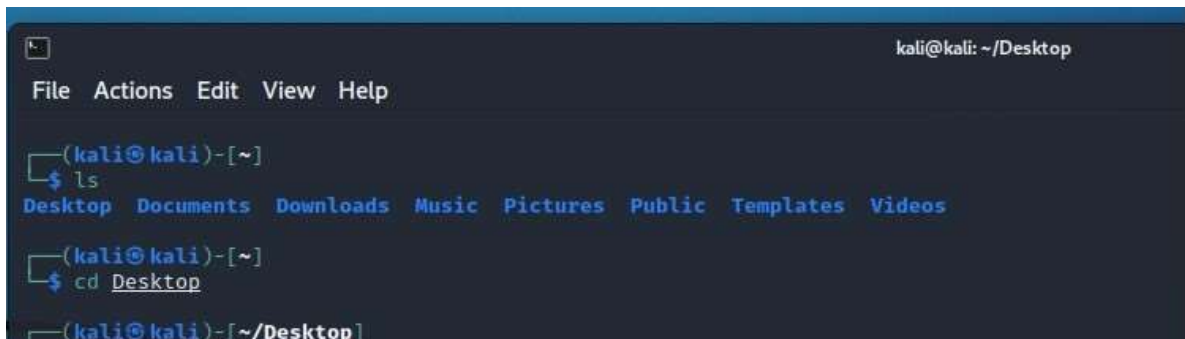
Desktop Documents Downloads Music Pictures Public Templates
Videos

A screenshot of a terminal window with a dark blue background. The title bar at the top right says 'kali@kali: ~/Desktop'. Below the title bar is a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal shows a prompt '(kali㉿kali)-[~]' followed by the command '\$ ls'. The output of the command is a list of directories: 'Desktop', 'Documents', 'Downloads', 'Music', 'Pictures', 'Public', 'Templates', and 'Videos', all in blue text.

B) cd: Change directory

```
(kali㉿kali)-[~]
```

```
$ cd Desktop
```

A screenshot of a terminal window with a dark blue background. The title bar at the top right says 'kali@kali: ~/Desktop'. Below the title bar is a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal shows a prompt '(kali㉿kali)-[~]' followed by the command '\$ ls', which outputs the same list of directories as the previous screenshot. Below that, the prompt is '(kali㉿kali)-[~]' followed by the command '\$ cd Desktop'. The final prompt is '(kali㉿kali)-[~/Desktop]', indicating the current directory has changed.

C) **pwd: Print working directory**

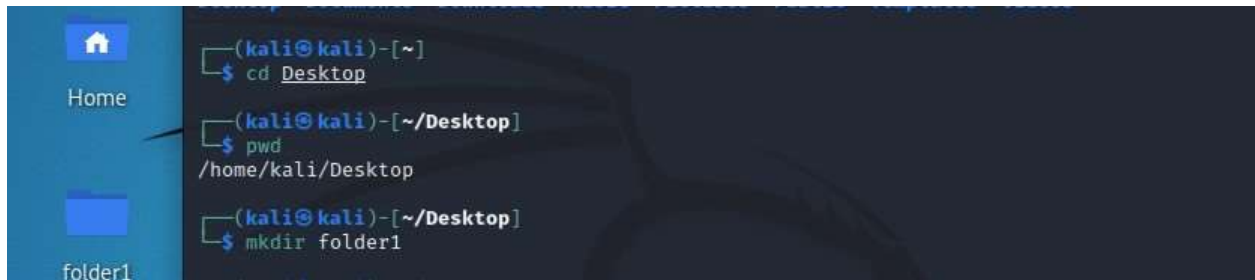
```
(kali㉿kali)-[~/Desktop]  
└─$ pwd  
/home/kali/Desktop
```

A terminal window with a dark background. The prompt is (kali㉿kali)-[~/Desktop]. The user enters the command pwd, and the output is /home/kali/Desktop.

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

D) **mkdir: Make directory**

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



E) **touch: Create an empty file**

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



F) cp: Copy files and directories

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

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

file1

A terminal window with a dark background and a Kali Linux logo watermark. It shows three commands being executed in sequence: 'ls folder1', 'cp file1 folder1', and 'ls folder1'. The output of the final command is '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]
└─$
```

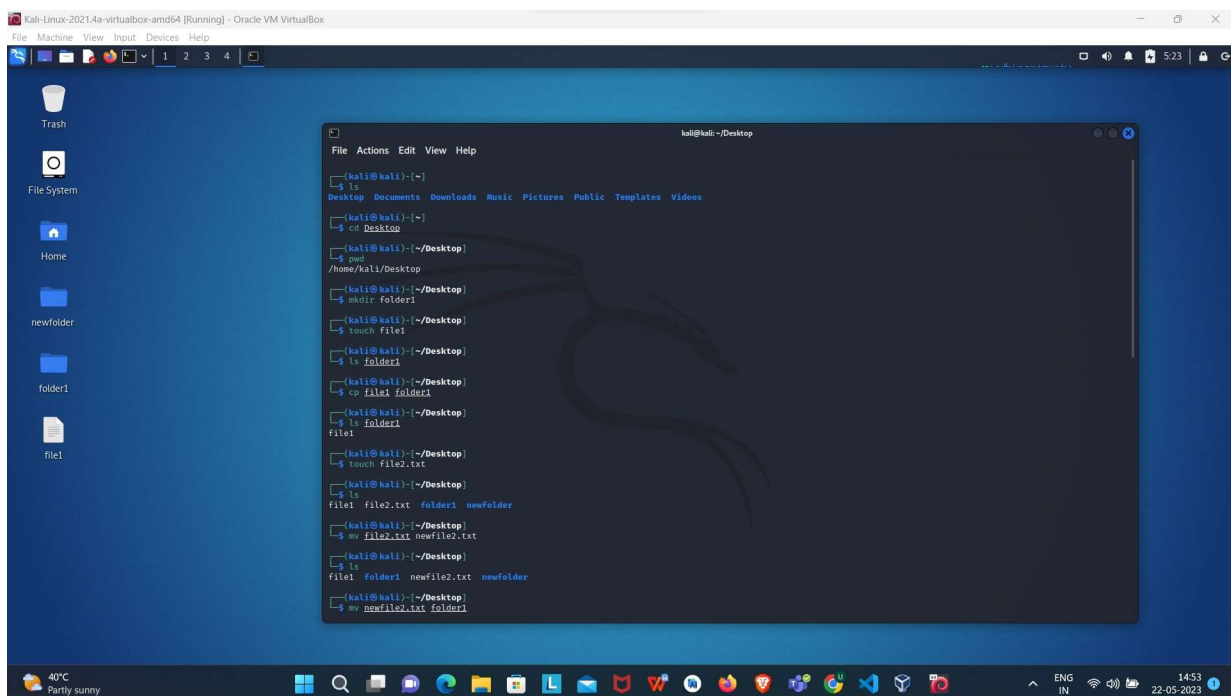
I) find: Search for files and directories

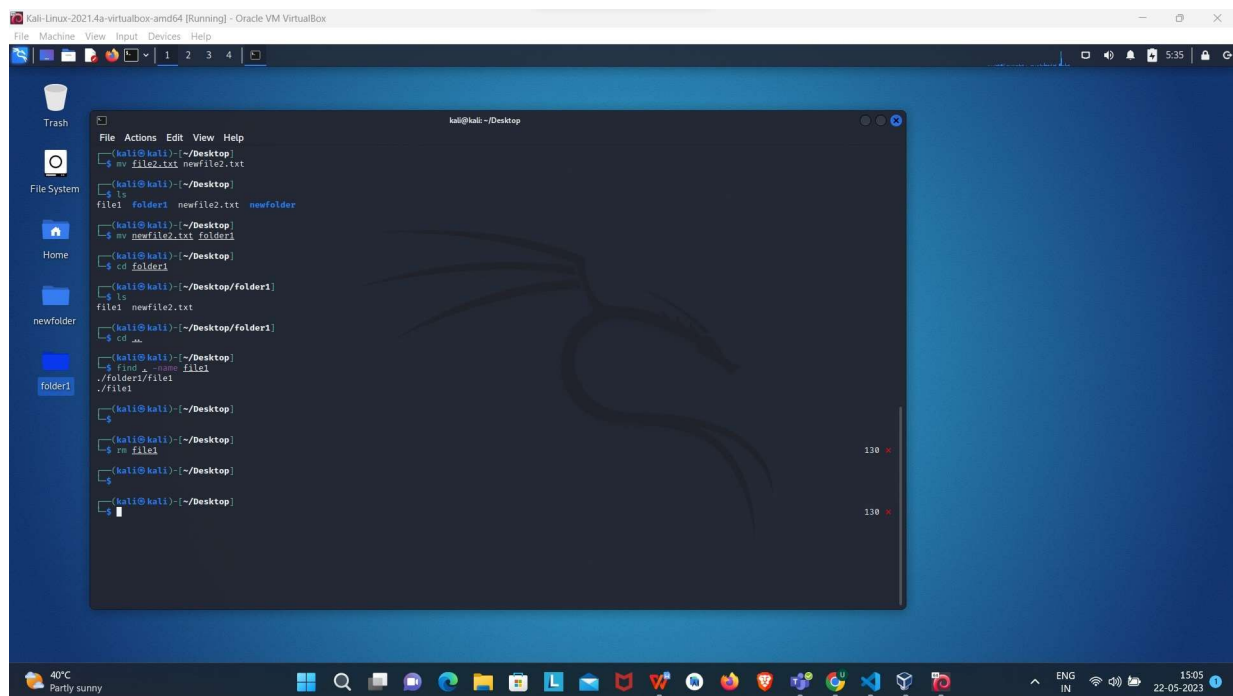
```
(kali㉿ kali)-[~/Desktop/folder1]  
└─$ cd ..
```

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

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

COMPLETE SNAPSHOT OF ALL COMMANDS TOGETHER





File Viewing and Editing:

Commands, Output, Screenshots::

J) cat: Concatenate and display file content

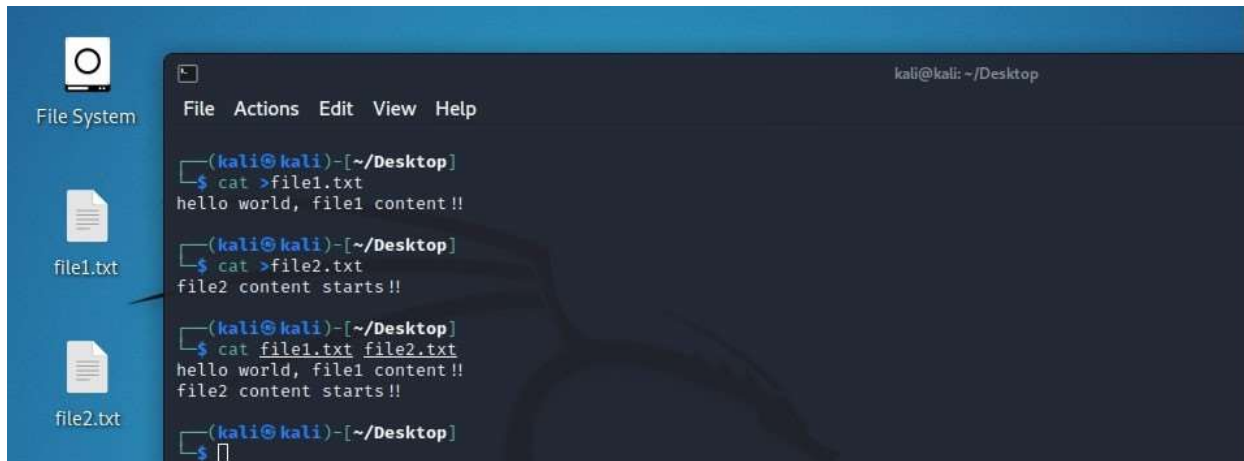
```
(kali@kali)-[~/Desktop]
└─$ cat >file1.txt
hello world, file1 content!!
```

```
(kali@kali)-[~/Desktop]
└─$ cat >file2.txt
file2 content starts!!
```

```

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

```

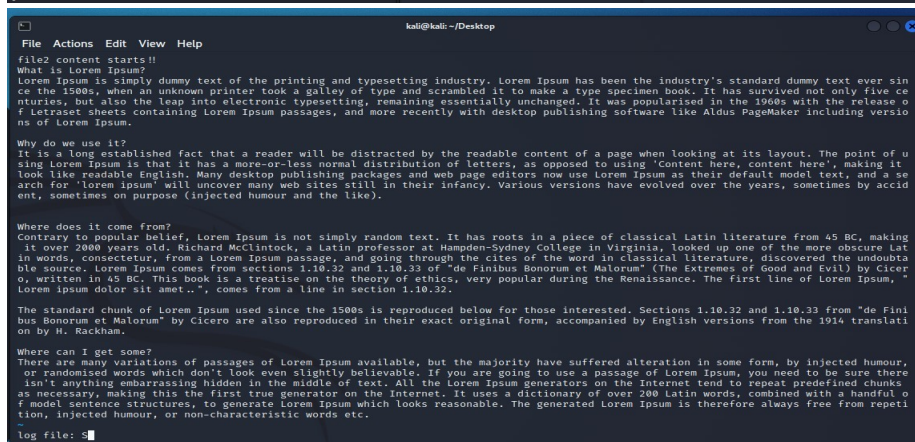
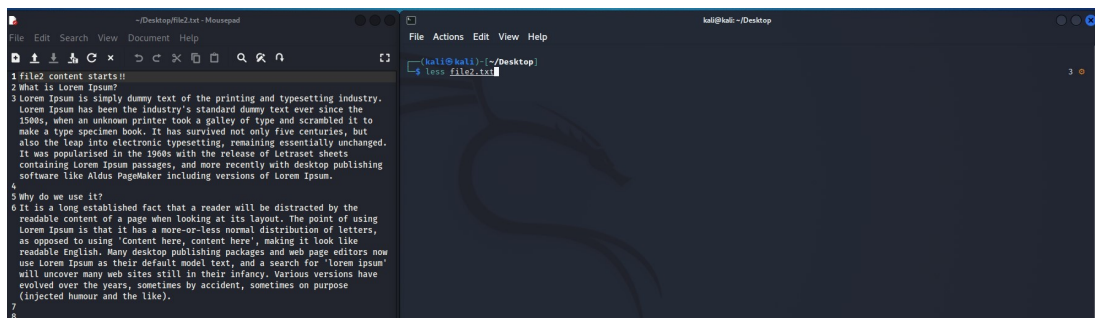


K) less: View file content with pagination

```

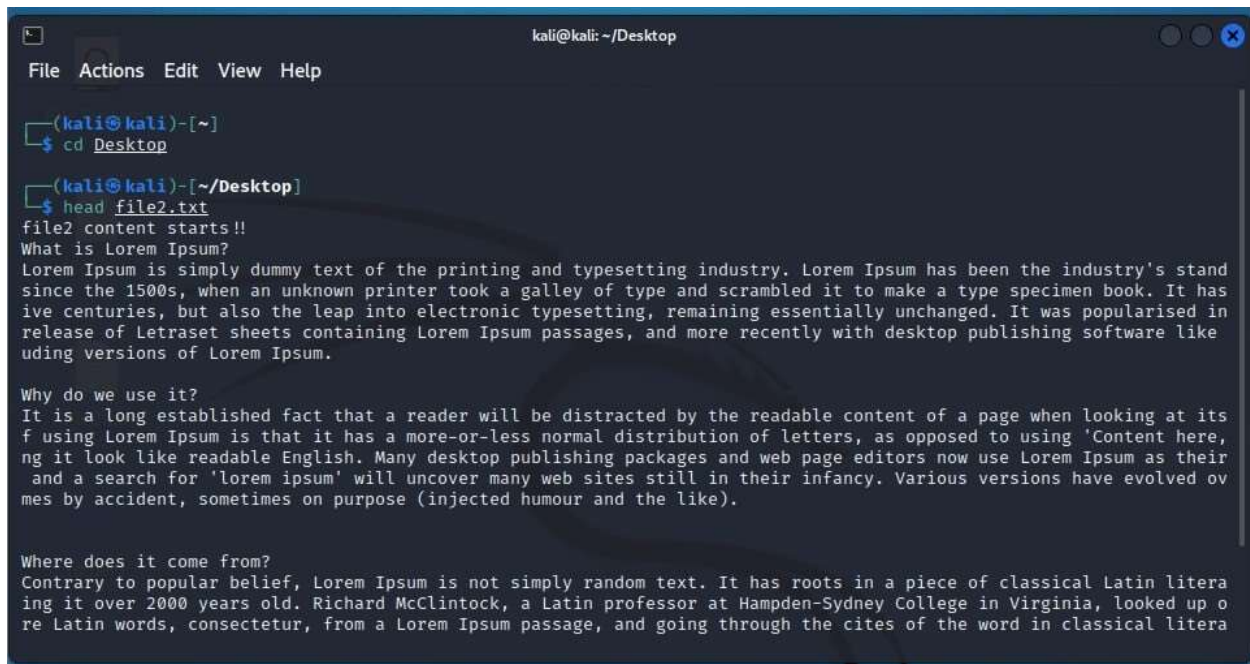
(kali㉿kali)-[~/Desktop]
└─$ less file2.txt

```



L) head: Display the beginning of a file

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



The screenshot shows a terminal window titled 'kali@kali: ~/Desktop'. The terminal has a menu bar with 'File', 'Actions', 'Edit', 'View', and 'Help'. The prompt is '(kali㉿kali)-[~]'. The user enters 'cd Desktop'. The prompt changes to '(kali㉿kali)-[~/Desktop]'. The user enters '\$ head file2.txt'. The output of the command is displayed, starting with 'file2 content starts!!' and followed by several paragraphs of Lorem Ipsum text.

```
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 page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes 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 literature from 45 BC, making it over 2000 years old. Richard McClintock, a Latin professor at Hampden-Sydney College in Virginia, looked up one of the more obscure Latin words, consectetur, from a Lorem Ipsum passage, and going through the cites of the word in classical literature, discovered the undoubtable source. Lorem Ipsum comes from sections 1.10.32 and 1.10.33 of "de Finibus Bonorum et Malorum" (The Extremes of Good and Evil) by Cicero, written in 45 BC. This book is a treatise on the theory of ethics, very popular during the Renaissance. The first line of Lorem Ipsum, "Lorem ipsum dolor sit amet...", comes from a line in section 1.10.32.

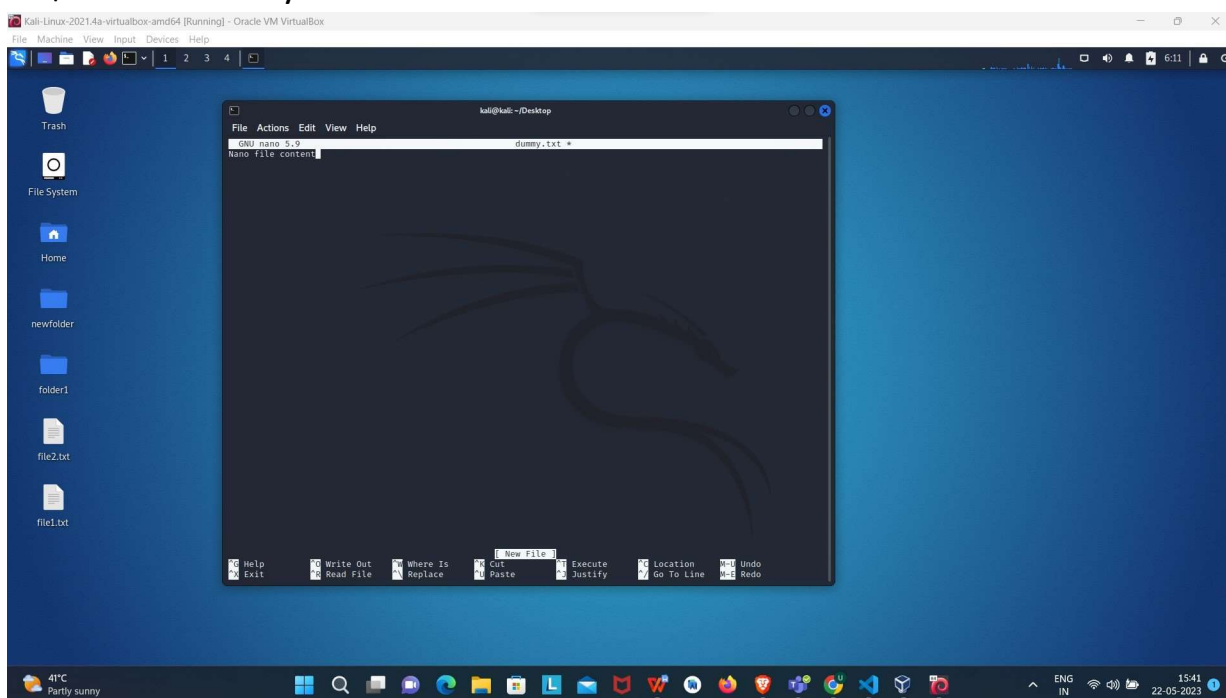
The standard chunk of Lorem Ipsum used since the 1500s is reproduced below for those interested. Sections 1.10.32 and 1.10.33 from "de Finibus Bonorum et Malorum" by Cicero are also reproduced in their exact original form, accompanied by English versions from the 1914 translation by H. Rackham.

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

(kali@kali)-[~/Desktop]
$
```

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

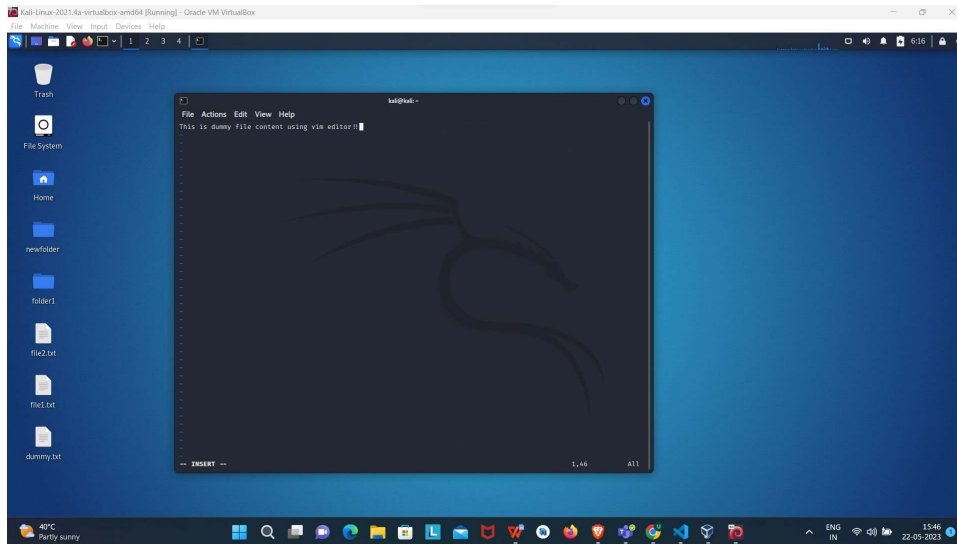
```
(kali@kali)-[~/Desktop]
$ nano dummy.txt
```



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

```
(kali@kali)-[~]
```

└─\$ vim dummy1.txt



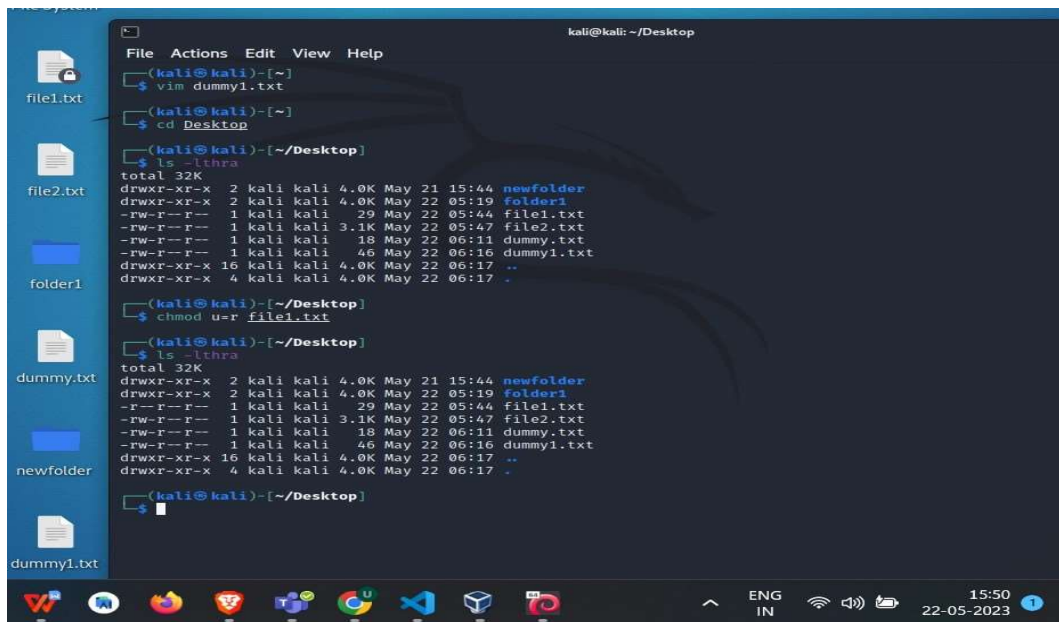
File Permissions:

Commands, Output, Screenshots::

P) chmod: Change file permissions

└─(kali㉿kali)-[~/Desktop]

└─\$ chmod u=r file1.txt



Q) chown: Change file owner

```
└─(kali@kali)-[~/Desktop]
```

```
└─$ sudo su root
```

```
1 x
```

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:

```
└─(rootxkali)-[/home/kali/Desktop]
```

```
└─# chown root file1.txt
```

```
└─(rootxkali)-[/home/kali/Desktop]
```

└─# ls -l

```
Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

root@kali: /home/kali/Desktop

kali@kali: ~/Desktop
└─$ chmod 777 file1.txt

kali@kali: ~/Desktop
└─$ 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 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

kali@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:
kSorry, try again.
[sudo] password for kali:
aSorry, try again.
[sudo] password for kali:
sudo: 3 incorrect password attempts

kali@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
-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 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
```

R) chgrp: Change file group

└─(root x kali)-[/home/kali/Desktop]

└─# chgrp root file1.txt

└─(root x kali)-[/home/kali/Desktop]

└─# ls -l

```
[sudo] password for kali:
root@kali: /home/kali/Desktop
└─# chown root file1.txt

root@kali: /home/kali/Desktop
└─$ 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 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
└─# chgrp root file1.txt

root@kali: /home/kali/Desktop
└─$ 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
```

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

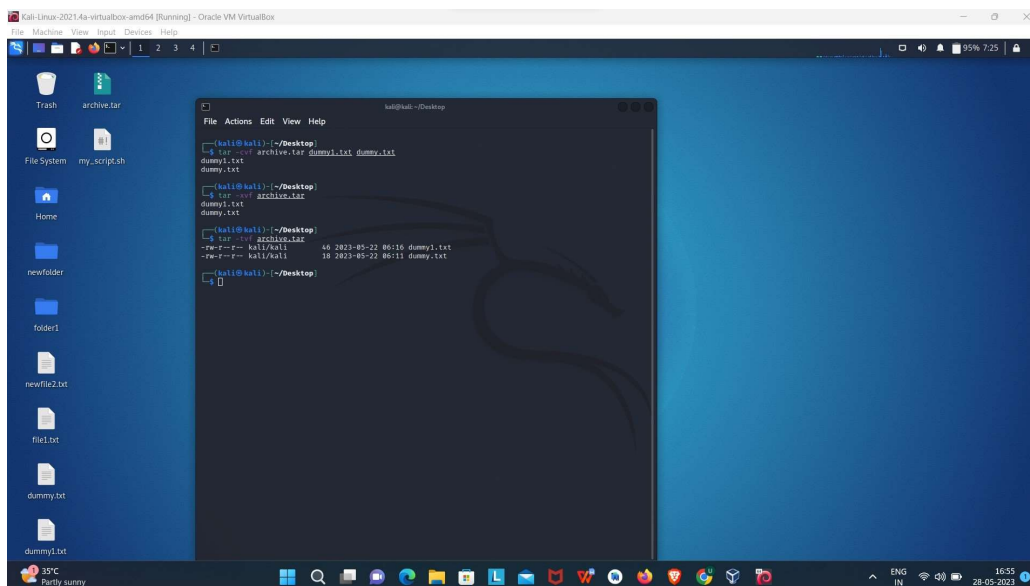
dummy.txt

└─(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



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
```

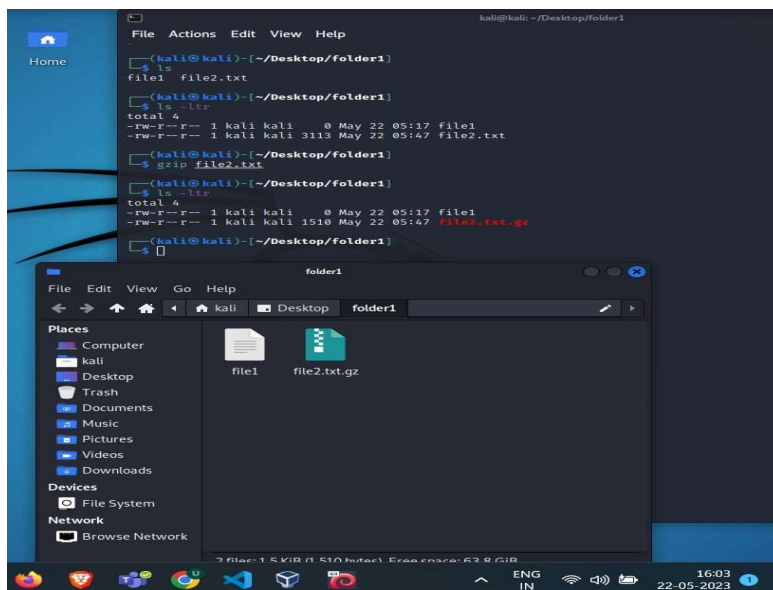
```
(kali㉿ kali)-[~/Desktop/folder1]
```

```
└─$ 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
```



U) unzip: Extract files from a ZIP archive

└─(kali㉿kali)-[~/Desktop/folder1]

└─\$ gunzip file2.txt

└─(kali㉿kali)-[~/Desktop/folder1]

└─\$ ls -ltr

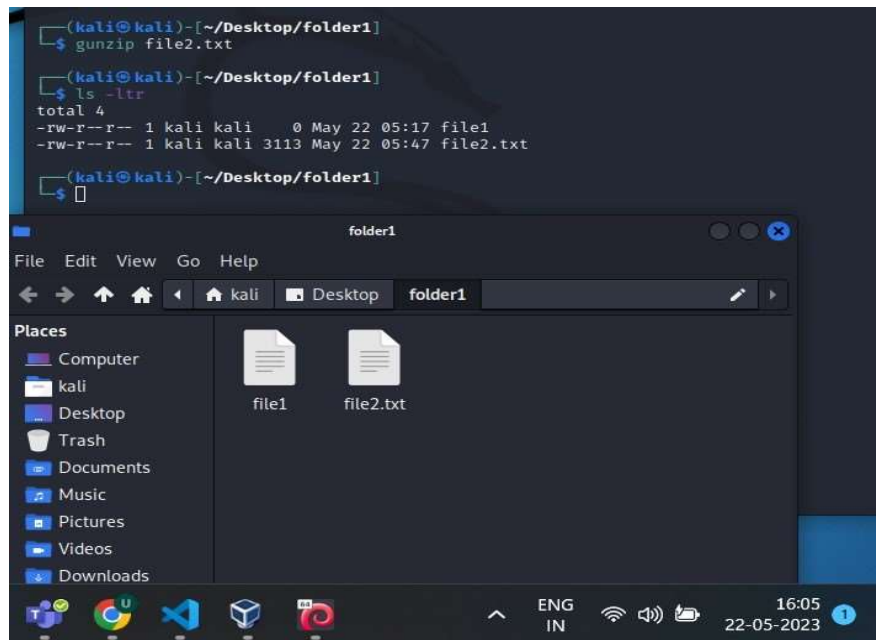
total 4

-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]

└─\$



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
```

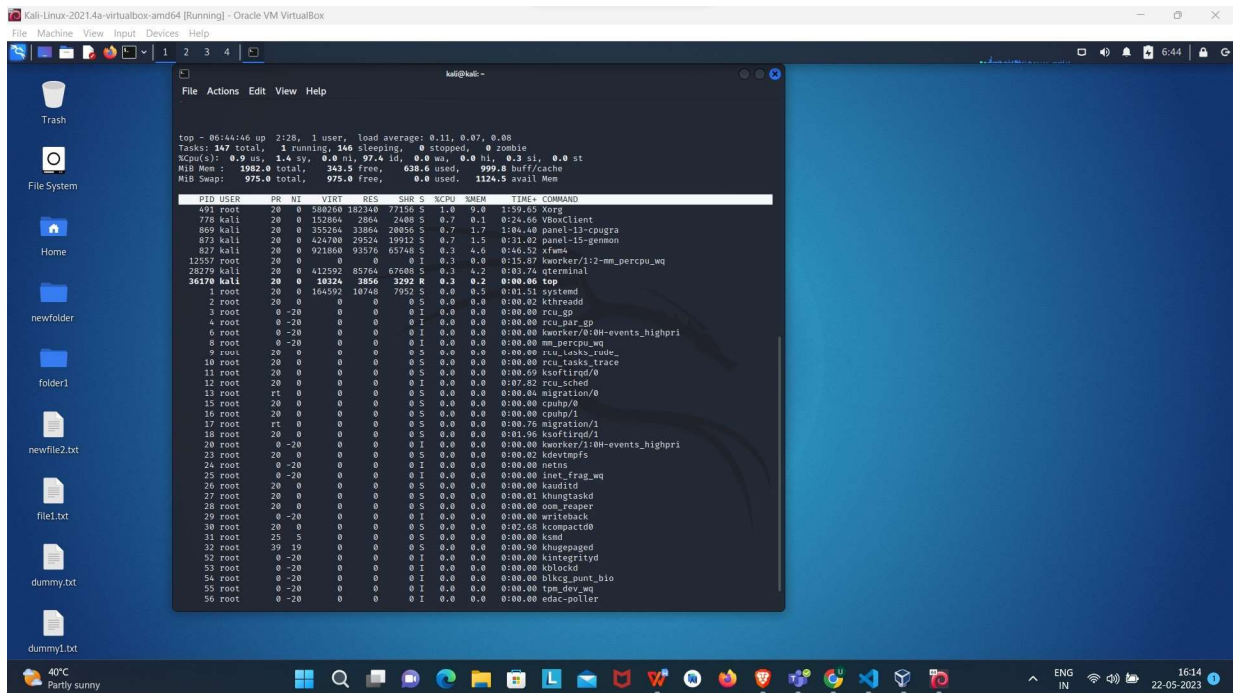


The screenshot shows a terminal window with a dark background. The title bar at the top right says 'kali@kali: ~'. The menu bar at the top includes 'File', 'Actions', 'Edit', 'View', and 'Help'. The terminal content shows the prompt '(kali㉿ kali)-[~]' followed by the command 'ps' being entered. The output of the command is displayed as a table with columns for PID, TTY, TIME, and CMD. The processes listed are 'zsh' (PID 28282) and 'ps' (PID 35957).

```
(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
```



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 🌀

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

```
Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4
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=161 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=162 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=159 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=161 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=160 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=167 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
(kali@kali)-[~]
└─$ jobs
[1] + suspended ping www.piet.co.in
(kali@kali)-[~]
└─$ bg %1
[1] + continued ping www.piet.co.in
(kali@kali)-[~]
└─$ 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=159 ms
64 bytes from 104.21.0.160 (104.21.0.160): icmp_seq=32 ttl=57 time=254 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=160 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
dummy1.txt
ENG IN 17:23 22-05-2023
```

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

148

```
Kali-Linux-2021.4a-virtualbox-amd64 [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
1 2 3 4 5
kali@kali: ~
File Actions Edit View Help
$ 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=161 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=165 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=164 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=164 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=159 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
zsh: 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=213 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
ENG IN 17:26 22-05-2023
```

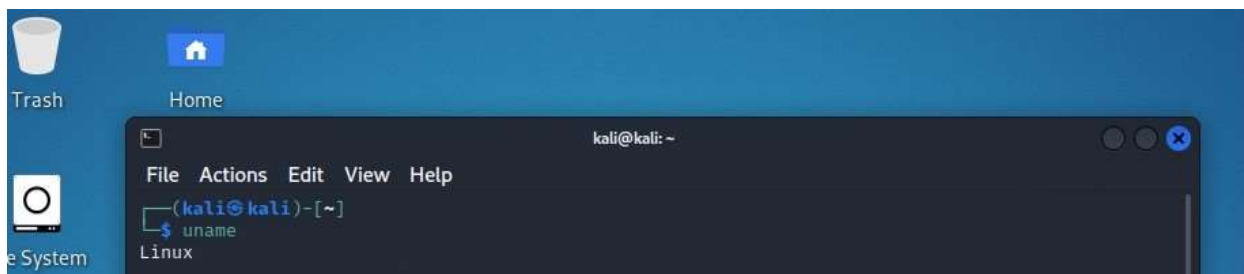
System Information:

Commands, Output, Screenshots::

AA) uname: Print system information

```
(kali@kali)-[~]
└─$ uname
```

Linux

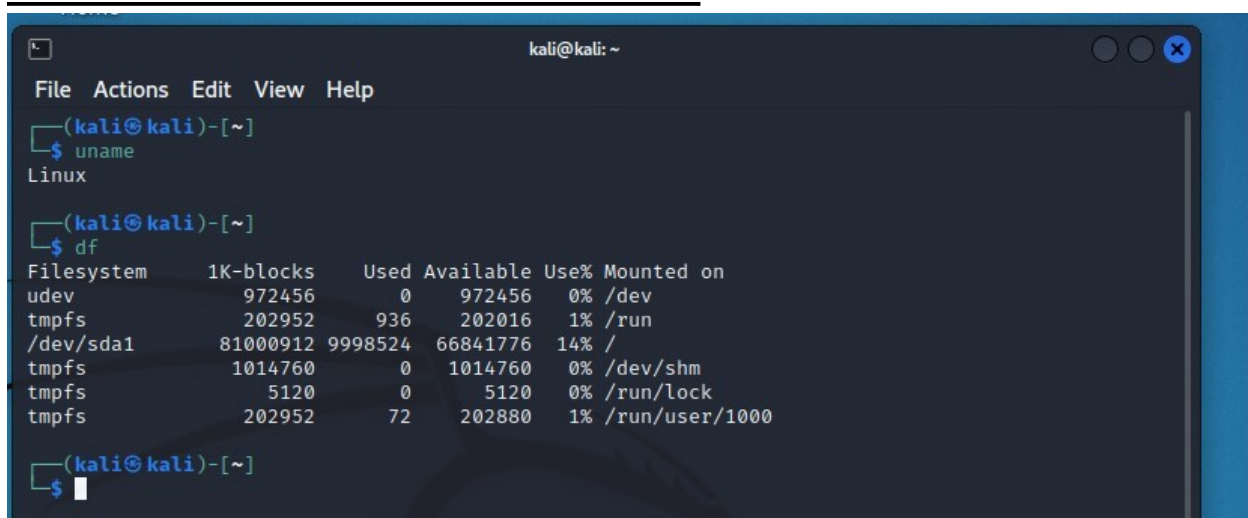


AB) df: Display disk space usage

```
(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

A screenshot of a Kali Linux terminal window. The window title is 'kali@kali: ~'. The terminal shows the command 'df' being executed, resulting in a table of disk space usage. The table has columns: Filesystem, 1K-blocks, Used, Available, Use%, and Mounted on. The data rows are: 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), and tmpfs (202952, 72, 202880, 1%, /run/user/1000). The terminal also shows the prompt '(kali㉿ kali)-[~]' and the command 'uname' being executed, returning 'Linux'.

```
kali@kali: ~  
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::

AG) 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)-[~]

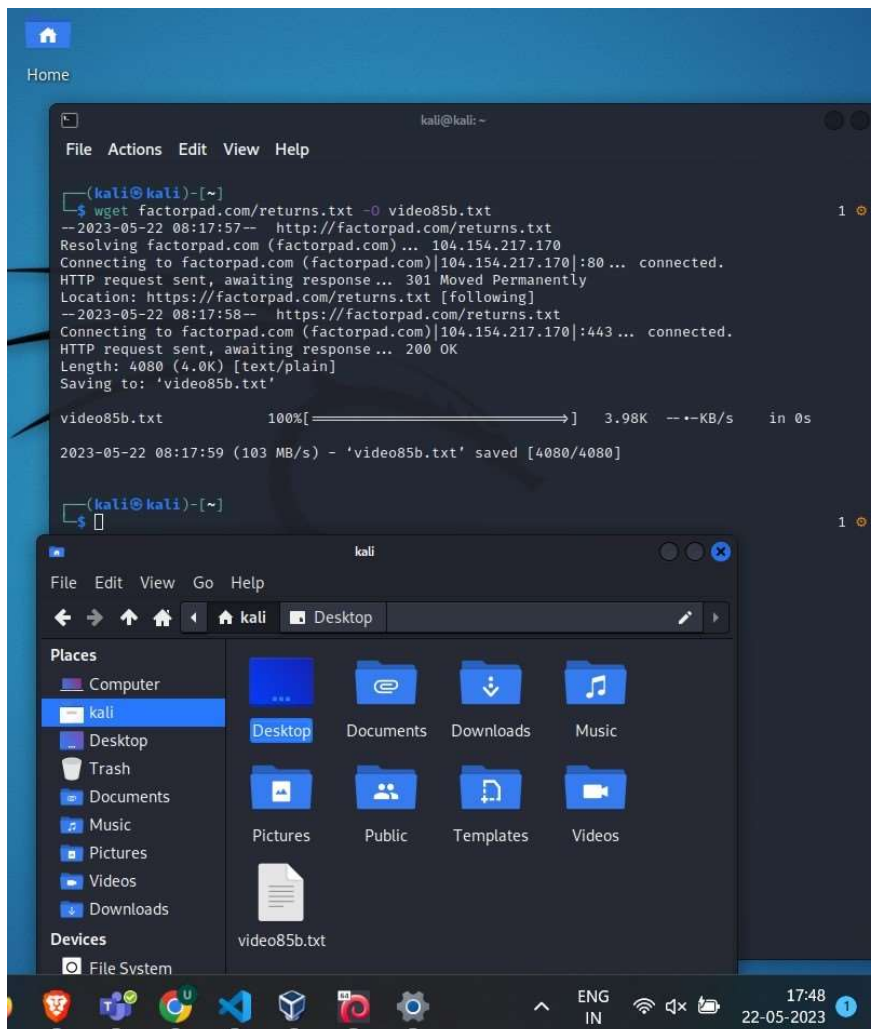
└─\$ scp local_file user@remote_host:remote_directory

```
(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



System Administration:

Commands, Output, Screenshots::

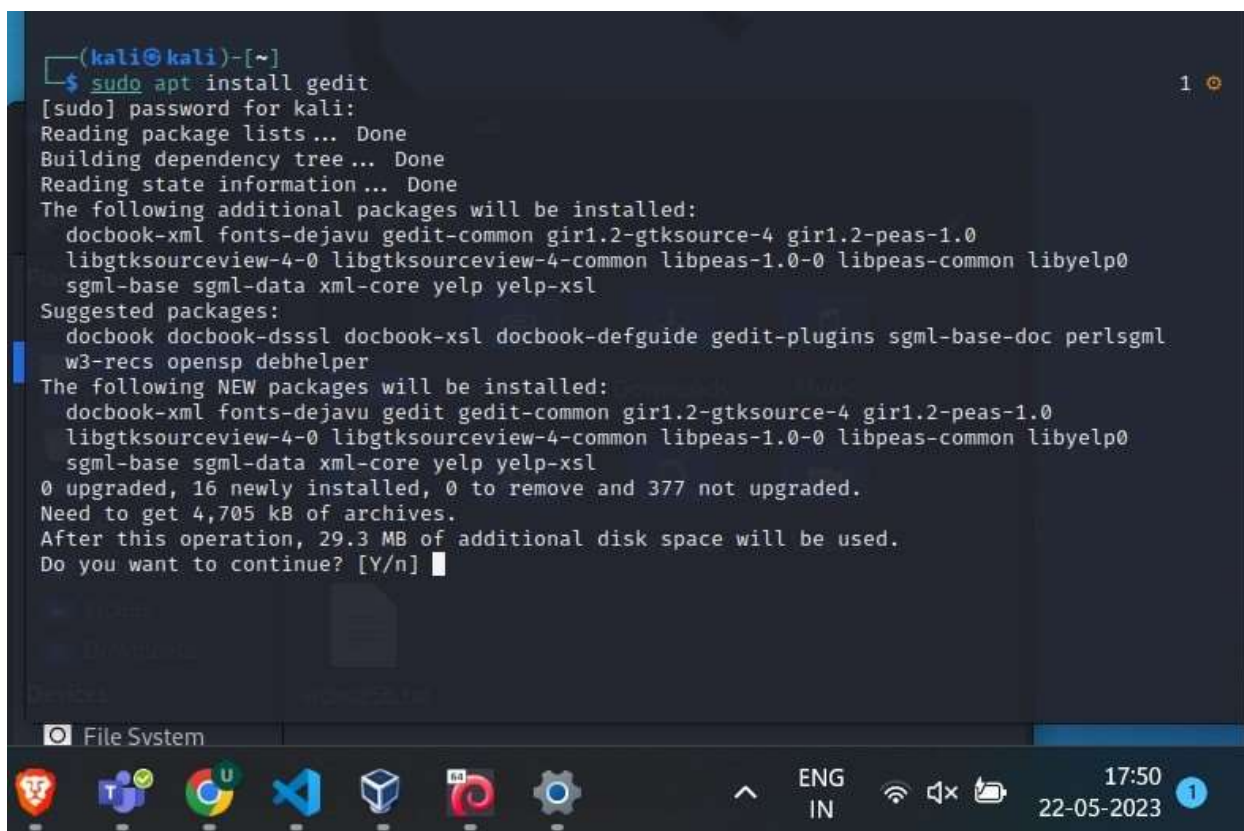
AL) sudo: Execute commands with superuser privileges

└─(kali㉿ kali)-[~]

└─\$ sudo apt install gedit

1 ⚙

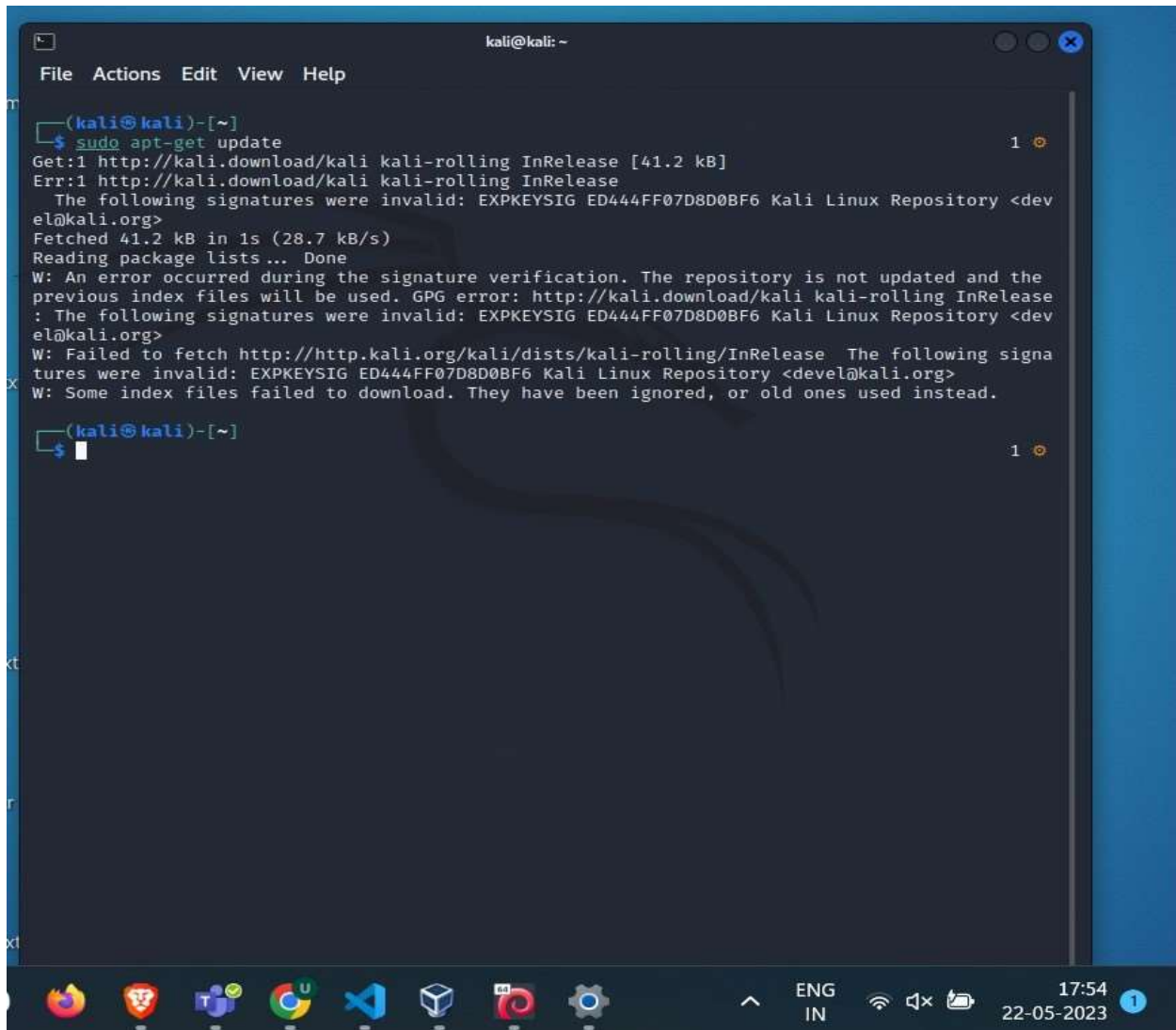
[sudo] password for kali: Reading
package lists... Done Building
dependency tree... DoneReading
state information... Done



```
(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
```



```
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 <dev  
el@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 <dev  
el@kali.org>  
W: Failed to fetch http://http.kali.org/kali/dists/kali-rolling/InRelease The following signa  
tures 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)-[~]  
└─$
```

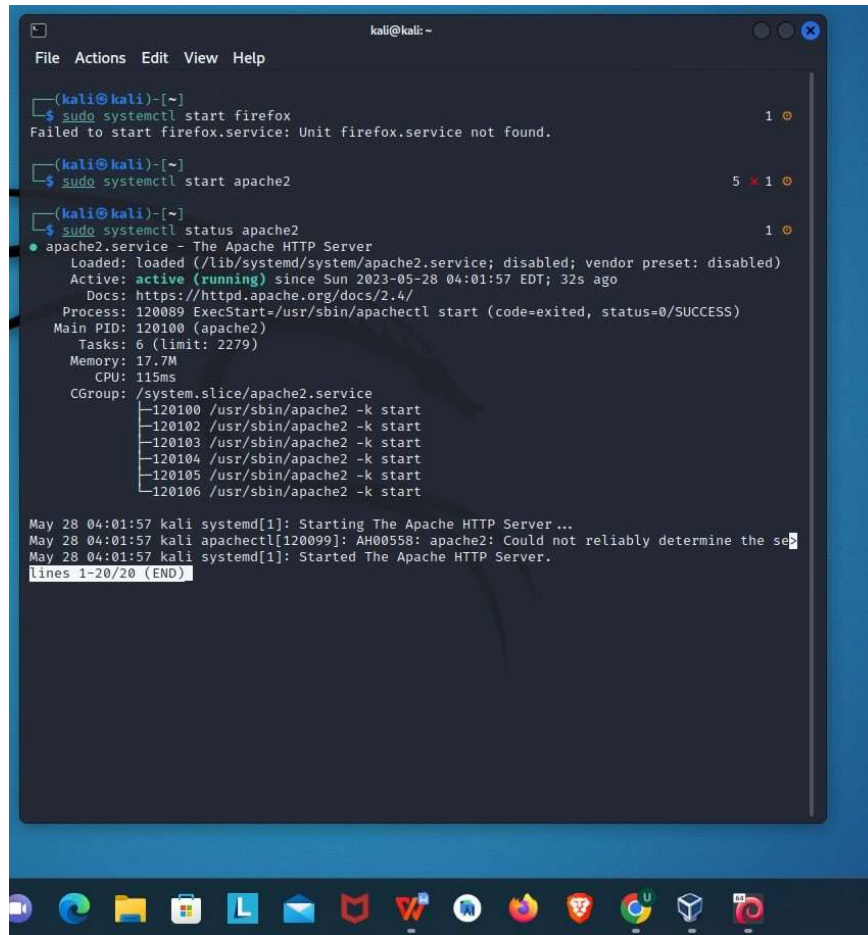
AN) yum: Package management for Red Hat-based distributions

```
sudo yum install httpd
```

```
sudo yum remove httpd
```

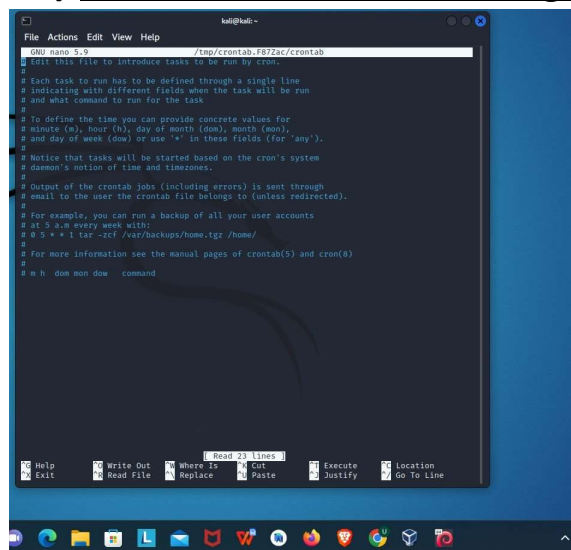
```
(kali㉿kali)-[~]  
└─$ sudo yum install httpd
```

AO) systemctl: Manage system services



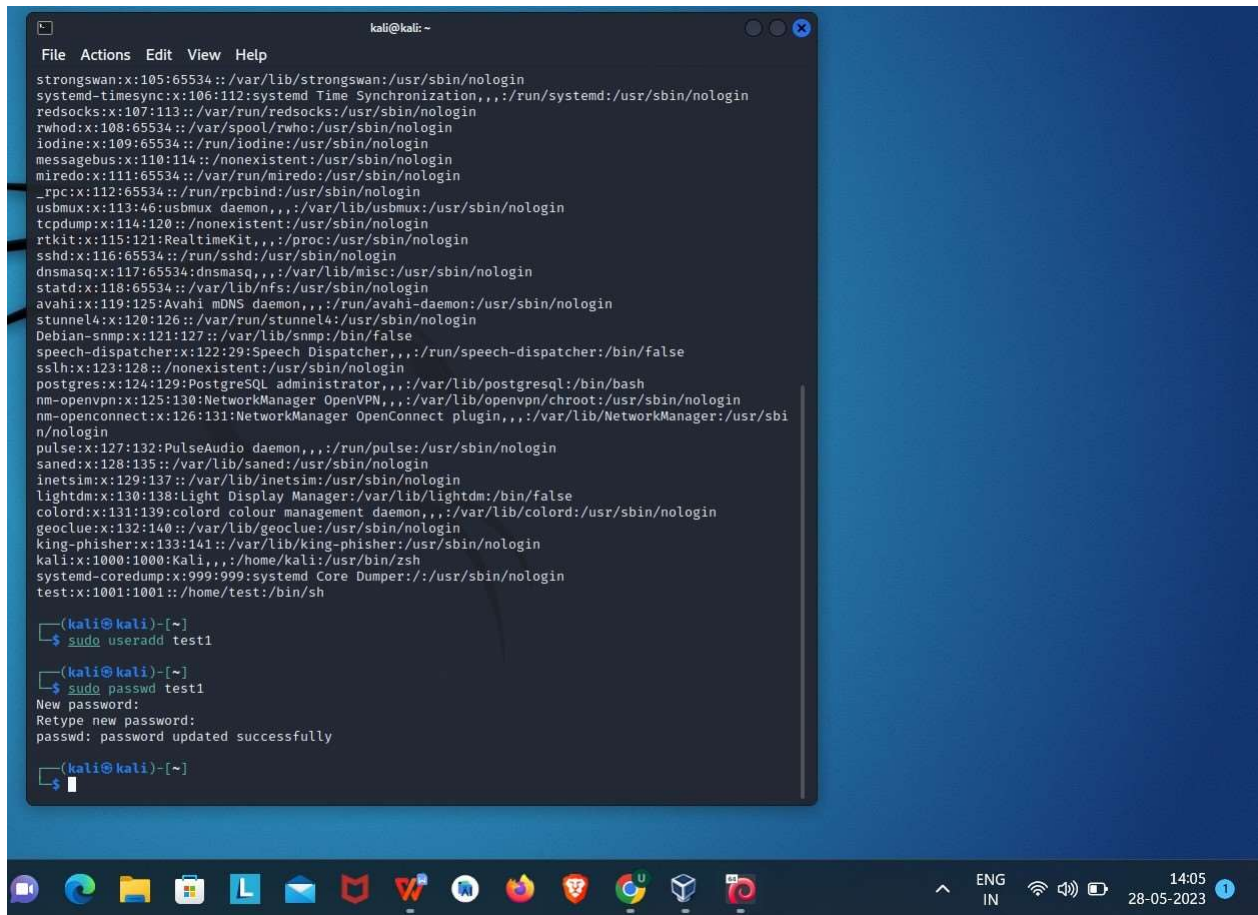
```
kali@kali: ~  
File Actions Edit View Help  
- (kali@kali)-[~]  
$ sudo systemctl start firefox  
Failed to start firefox.service: Unit firefox.service not found.  
- (kali@kali)-[~]  
$ sudo systemctl start apache2  
- (kali@kali)-[~]  
$ sudo systemctl status apache2  
● apache2.service - The Apache 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  
  
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 se  
May 28 04:01:57 kali systemd[1]: Started The Apache HTTP Server.  
lines 1-20/20 (END)
```

AP) crontab: Schedule recurring tasks



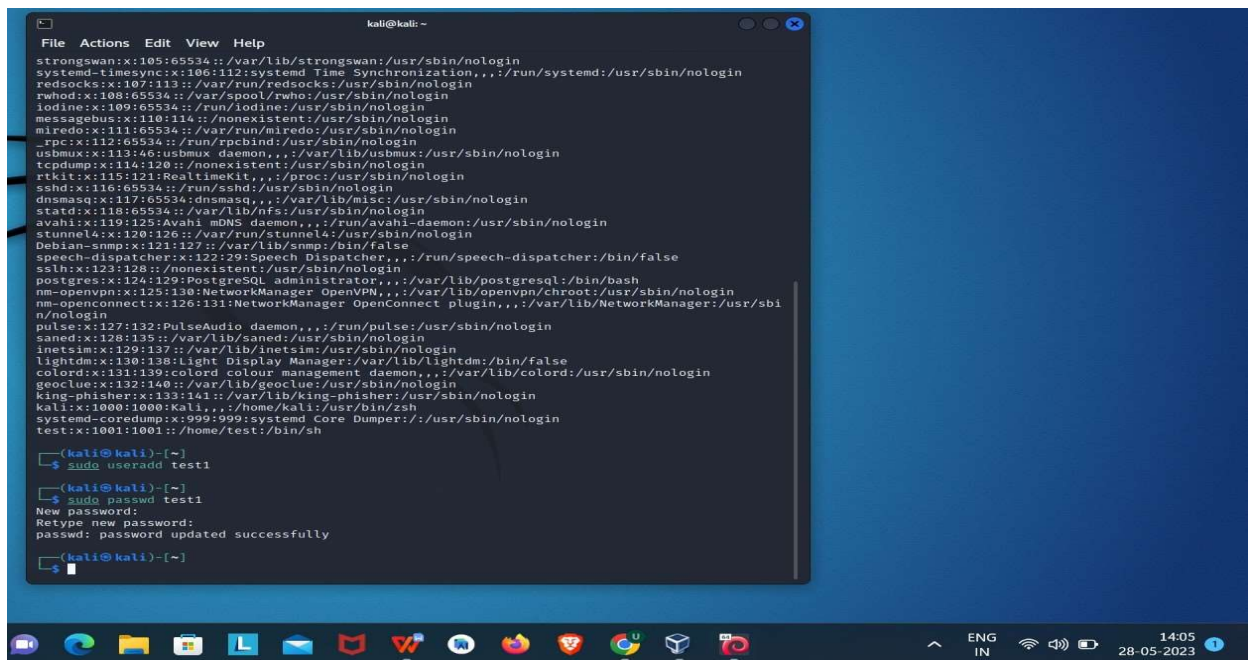
```
kali@kali: ~  
File Actions Edit View Help  
GNU nano 3.9 /tmp/crontab.F872ac/crontab  
# Edit this file to introduce tasks to be run by cron.  
#  
# Each task to run has to be defined through a single line  
# indicating with different fields when the task will be run  
# and what command to run 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 timezones.  
#  
# 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 with:  
# 0 5 * * 1 tar -czf /usr/backups/home.tar.gz /home/  
#  
# For more information see the Manual pages of crontab(5) and cron(8)  
#  
# h h dom mon dow   command
```


AQ) useradd: Add a new user



```
kali@kali: ~  
File Actions Edit View Help  
strongswan:x:105:65534::/var/lib/strongswan:/usr/sbin/nologin  
systemd-timesync:x:106:112::systemd Time Synchronization,,,:/run/systemd:/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/ssh:/usr/sbin/nologin  
dnsmasq:x:117:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin  
statd:x:118:65534::/var/lib/isc:/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-snmpp:x:121:127::/var/lib/snmpp:/bin/false  
speech-dispatcher:x:122:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false  
ssllh: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  
inetsim:x:129:137::/var/lib/inetsim:/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:999:99: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)-[~]  
└─$
```

AR) passwd: Change user password



```
kali@kali: ~  
File Actions Edit View Help  
strongswan:x:105:65534::/var/lib/strongswan:/usr/sbin/nologin  
systemd-timesync:x:106:112::systemd Time Synchronization,,,:/run/systemd:/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/ssh:/usr/sbin/nologin  
dnsmasq:x:117:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin  
statd:x:118:65534::/var/lib/isc:/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-snmpp:x:121:127::/var/lib/snmpp:/bin/false  
speech-dispatcher:x:122:29:Speech Dispatcher,,,:/run/speech-dispatcher:/bin/false  
ssllh: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  
inetsim:x:129:137::/var/lib/inetsim:/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:999:99: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)-[~]  
└─$
```

