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Testing in Kali Linux

Section 1: Linux Basics:

1. What is **Linux**, and how does it differ from other operating systems like **Windows** and **macOS**?

- Kali Linux is an operating system like **Windows** and **macOS**.
- The differences between **Linux** and (**Windows** and **macOS**) are in many things like:

1. Open source:

- Linux is open-source software:
 - It's free and can be modified by anyone.
- **Windows** and **macOS**:
 - are proprietary OS.
 - They are owned and controlled.

2. Security:

- Linux is more secure than other OS.

3. Distribution:

- Unlike **Windows** and **macOS**

Kali has many distributions like (Ubuntu, Fedora, Debain, CentOS)

2. . Name three popular Linux distributions and briefly describe one of them.

1. Ubuntu
2. Fedor
3. Debain
4. CentOS

• The description of **Ubuntu**:

1. Ubuntu is one of the best distributions of Linux.
2. It's known that it's the easiest distributions.
3. There are Many Communities in Ubuntu because of that you can get what you want just to ask, and they will give you what are you looking for.
4. The usage of Ubuntu like Windows and it has a lot of GUIs.

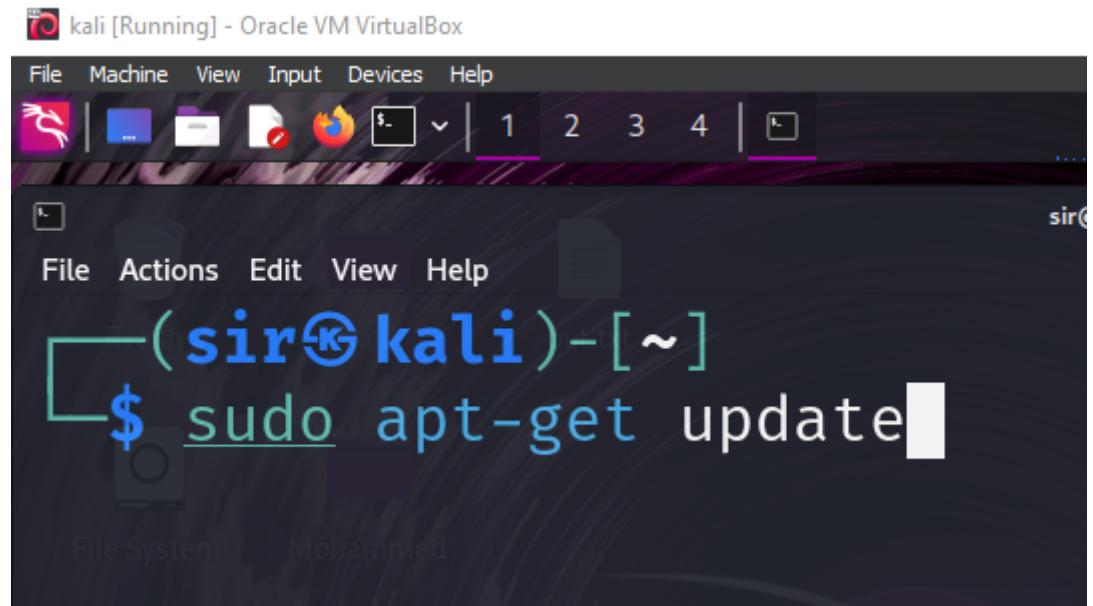
3. What is the root directory in Linux, and what is its significance?

• Root directory:

The root directory is the main place that all directories come from it.
The symbol of it is (/).

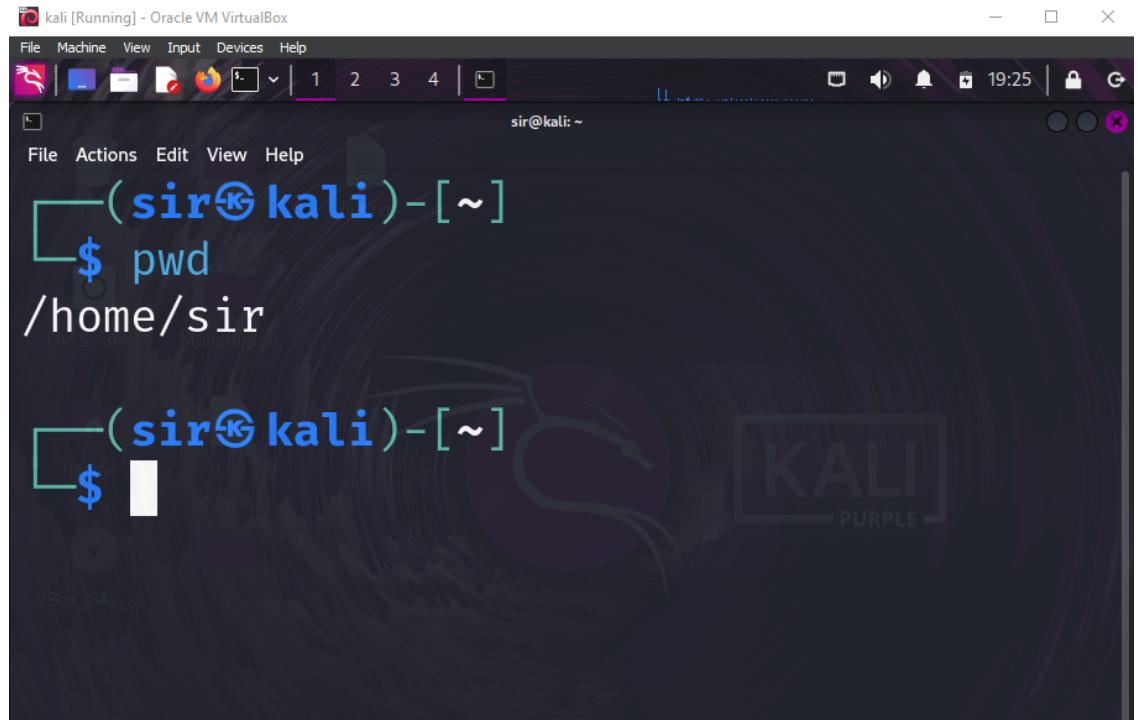
- The significance of Root directory:
 1. The main structure system in Linux.
 2. Root directory has all the power in the system.
 3. Most of the application that install in the system by the root directory.
 4. When the Linux start to open the first system is open It's root directory.
 5. Root directory provide a high level of security.
- 4. Explain the difference between an absolute path and a relative path in Linux.
 - The absolute path:
An absolute path specific the location of a file or directory completely starting from the ROOT.
 - Relative path:
A relative path specific the location of a file or directory relative to the user's current location.
- 5. What command would you use to update the package list on a Debian-based system?

- To update the package list on a Debian-based system we should use this Command (**sudo apt-get update**).



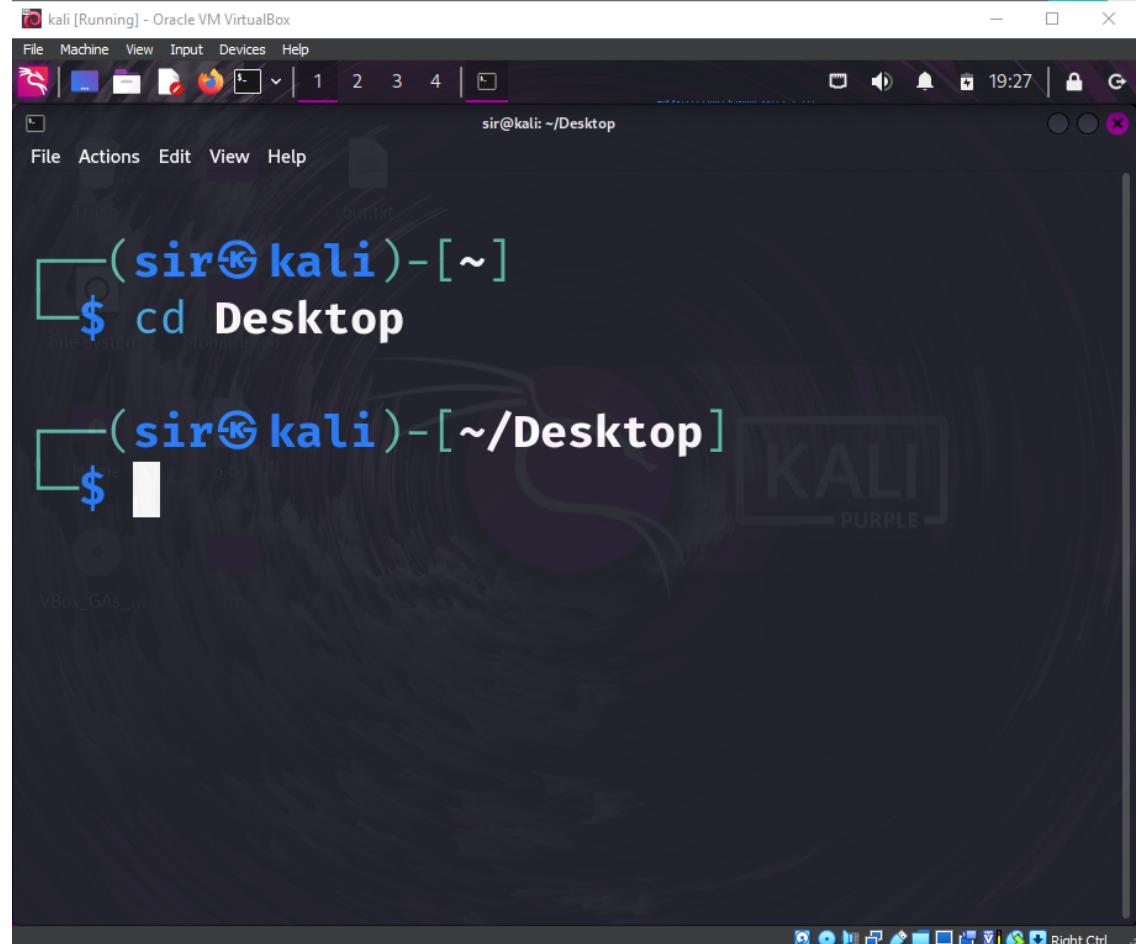
Section 2: Basic Commands and Navigation:

6. Write the command to display the current working directory.



A screenshot of a Kali Linux terminal window titled "kali [Running] - Oracle VM VirtualBox". The window shows a terminal session with the following text:
sir@kali: ~
\$ pwd
/home/sir

7. How do you change to the `/etc` directory from your current location?



A screenshot of a Kali Linux terminal window titled "kali [Running] - Oracle VM VirtualBox". The terminal shows the command:

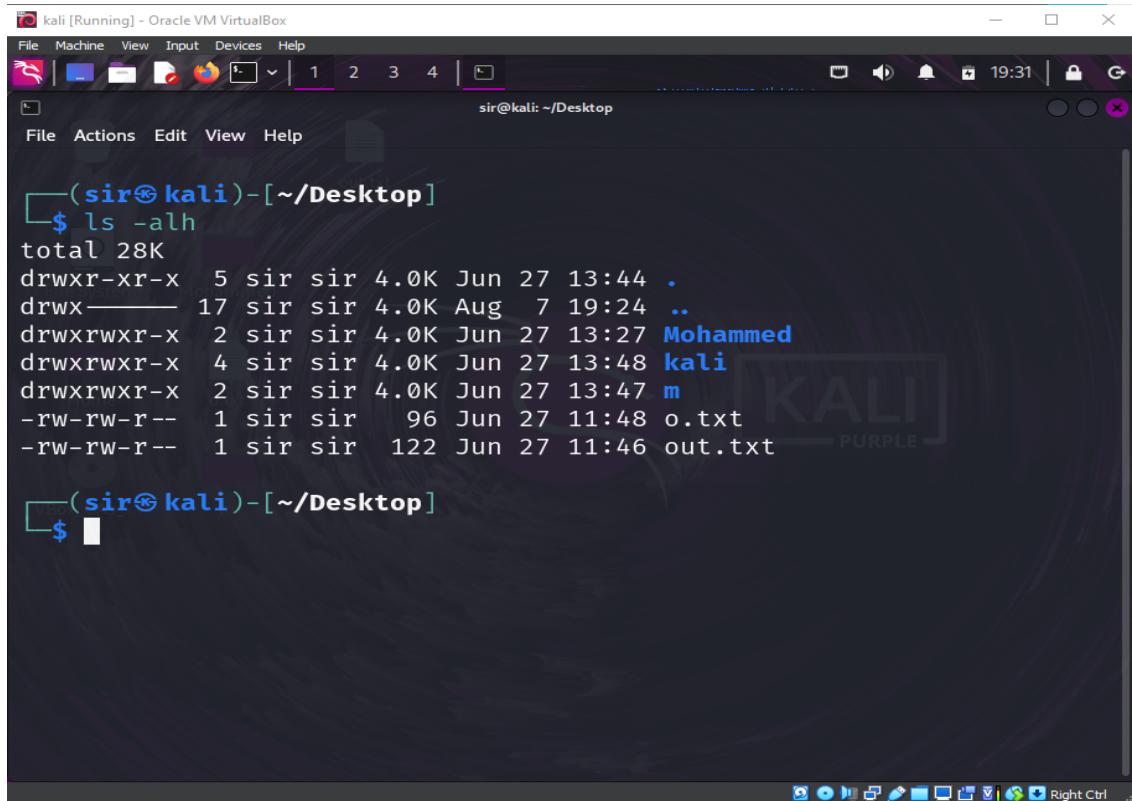
```
(sir㉿kali)-[~]
$ cd Desktop
```

The terminal then displays the result of the command:

```
(sir㉿kali)-[~/Desktop]
$
```

The desktop background features the Kali Purple logo.

8. List the contents of the `/home` directory, including hidden files, in a detailed list format.



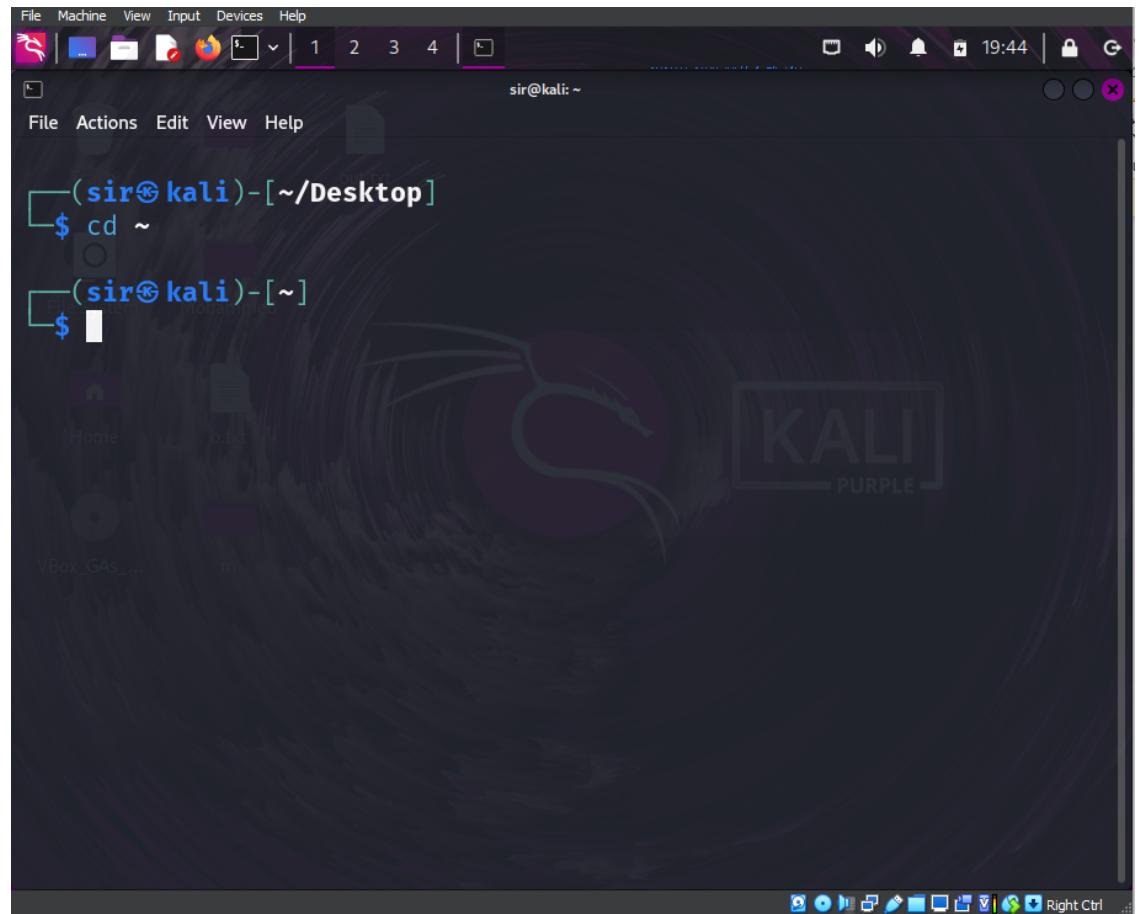
The screenshot shows a terminal window titled "kali [Running] - Oracle VM VirtualBox". The terminal prompt is "(sir@sir)-[~/Desktop]". The user has run the command "ls -alh" which lists the contents of the current directory (~) in a detailed format. The output shows the following files and their details:

```
total 28K
drwxr-xr-x  5 sir  sir  4.0K Jun 27 13:44 .
drwx----- 17 sir  sir  4.0K Aug  7 19:24 ..
drwxrwxr-x  2 sir  sir  4.0K Jun 27 13:27 Mohammed
drwxrwxr-x  4 sir  sir  4.0K Jun 27 13:48 kali
drwxrwxr-x  2 sir  sir  4.0K Jun 27 13:47 m
-rw-rw-r--  1 sir  sir   96 Jun 27 11:48 o.txt
-rw-rw-r--  1 sir  sir  122 Jun 27 11:46 out.txt
```

9. Explain the purpose of the `ls -l` command and what information it provides.

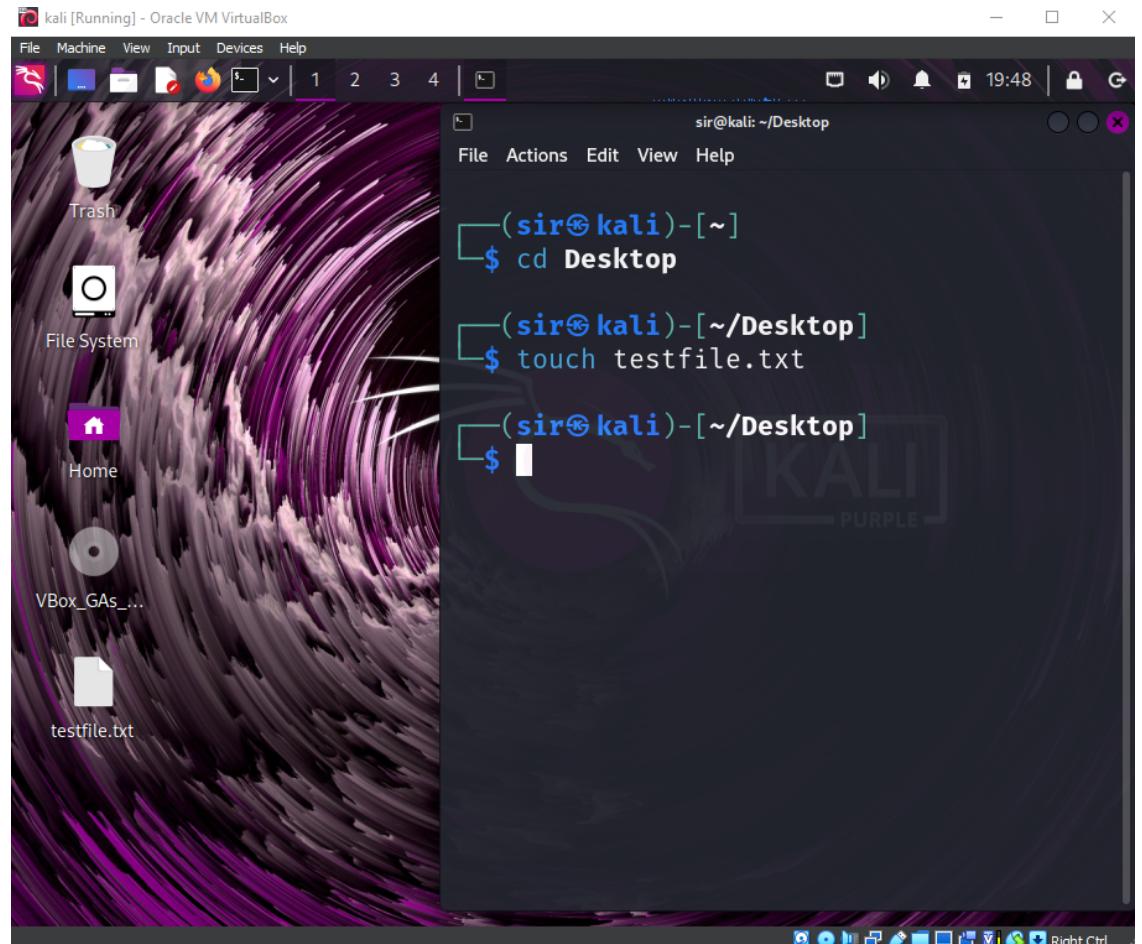
- It shows the total of folders and files and anything and it can't not the total you can know it by adding (h) to know how many gigabits the folders and files.
- It shows the folders and files locations.
- It shows the date of creating the folders and files.
- It shows the folders and files extensions.

10. What command can be used to return to your home directory from any location in the file system?

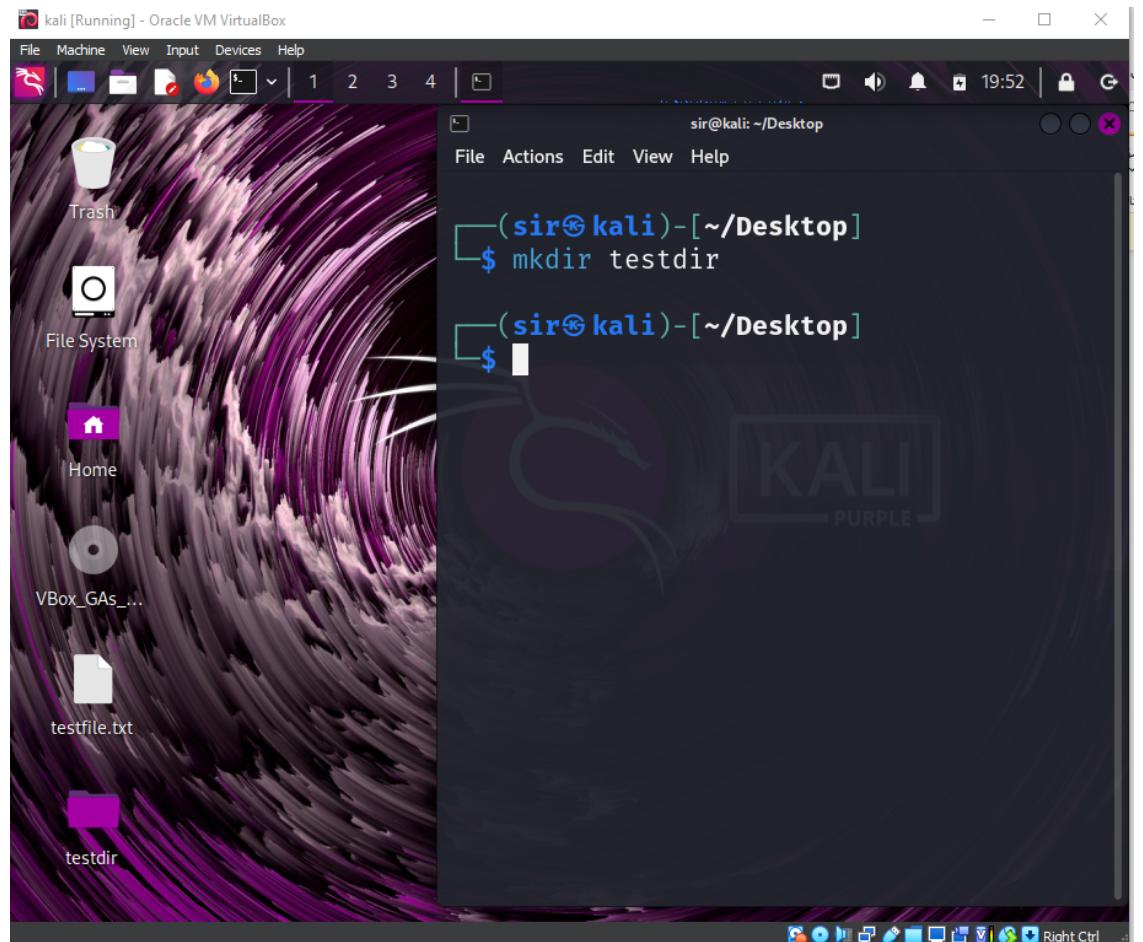


Section 3: File Management:

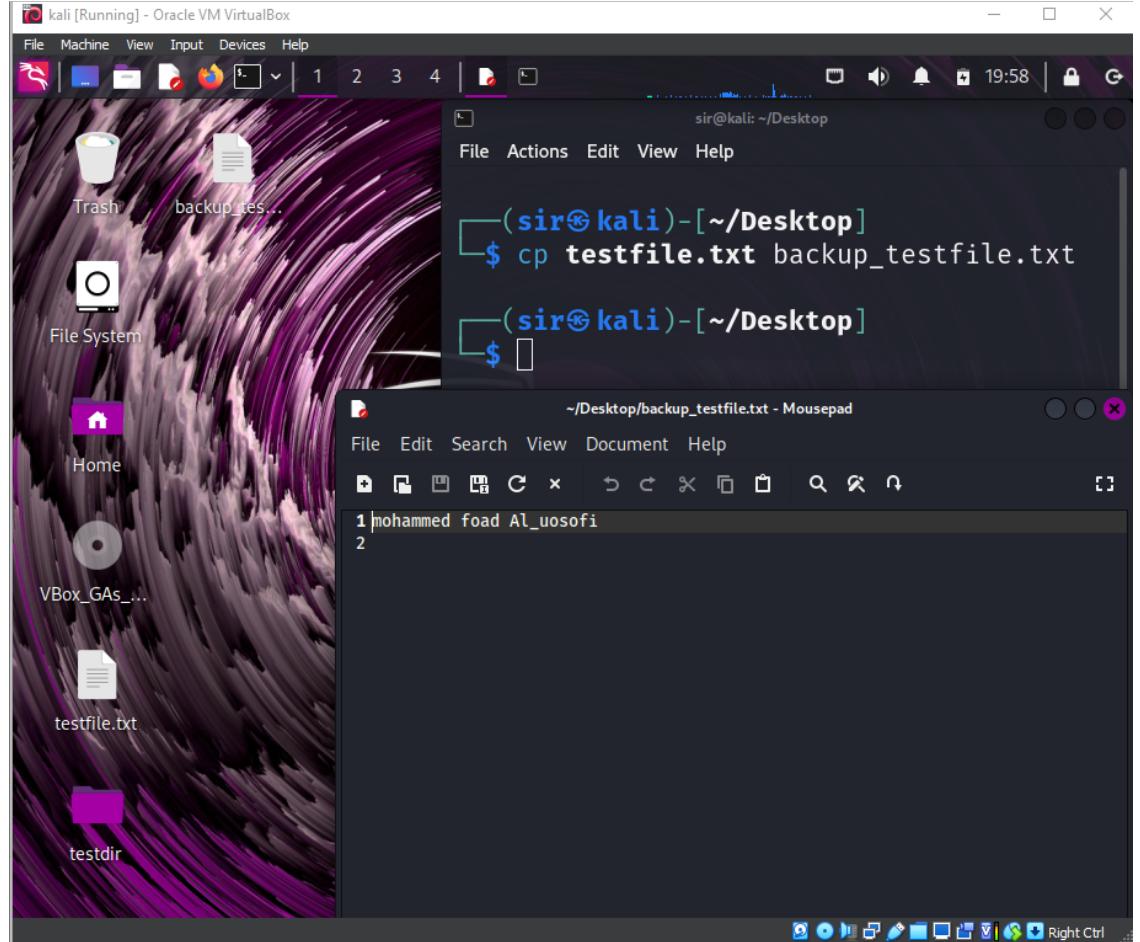
11. Write the command to create an empty file named `testfile.txt`.



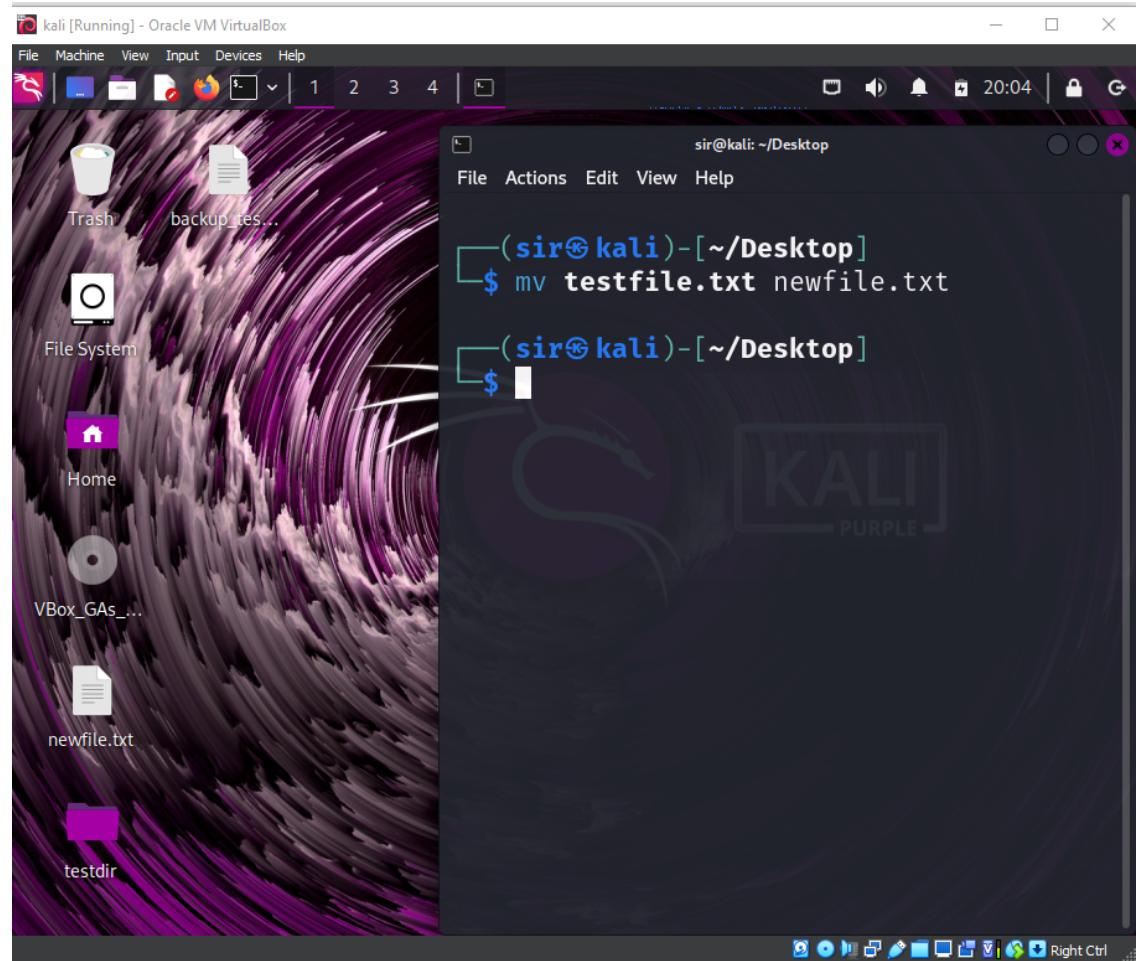
12. How do you create a directory named `testdir`?



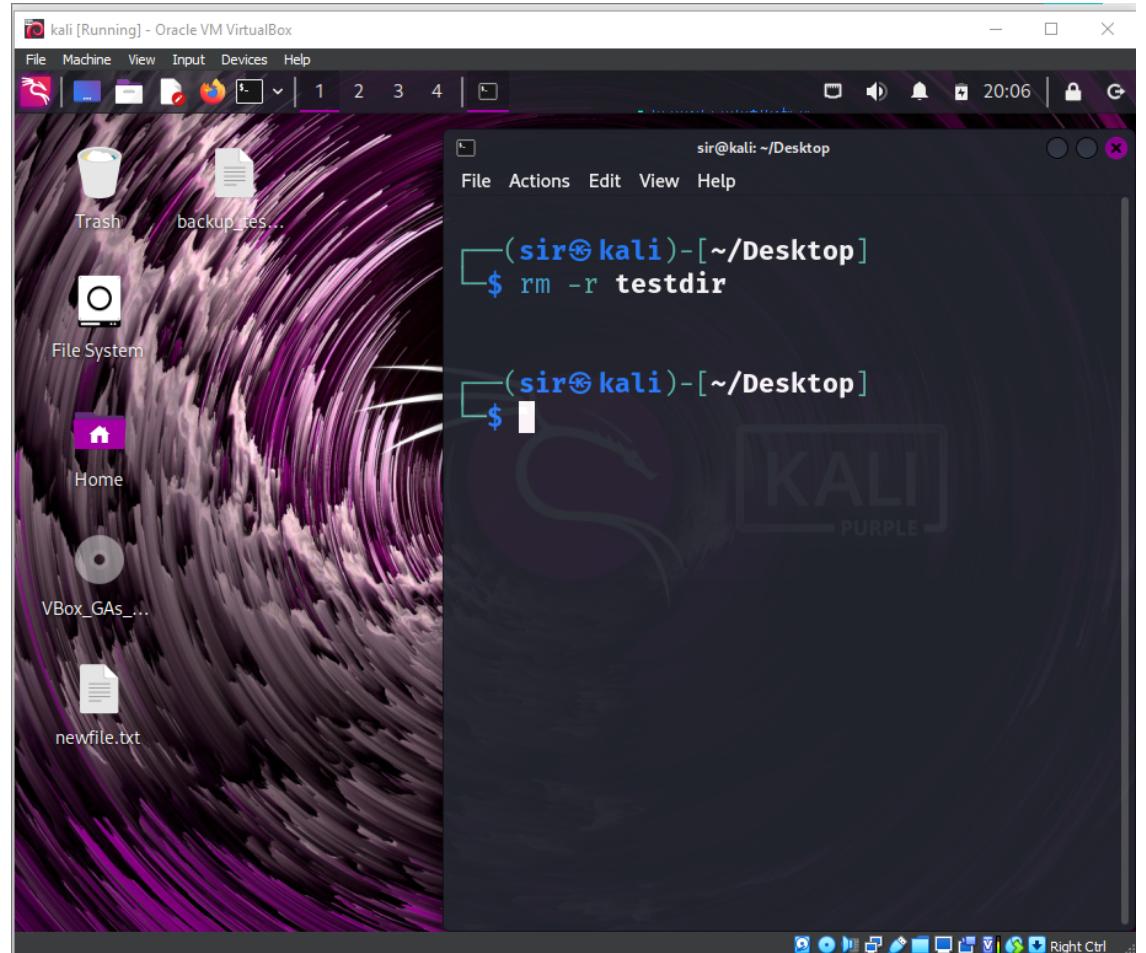
13. Write the command to copy `testfile.txt` to `backup_testfile.txt`.



14. What command would you use to move (rename) `testfile.txt` to `newfile.txt`?

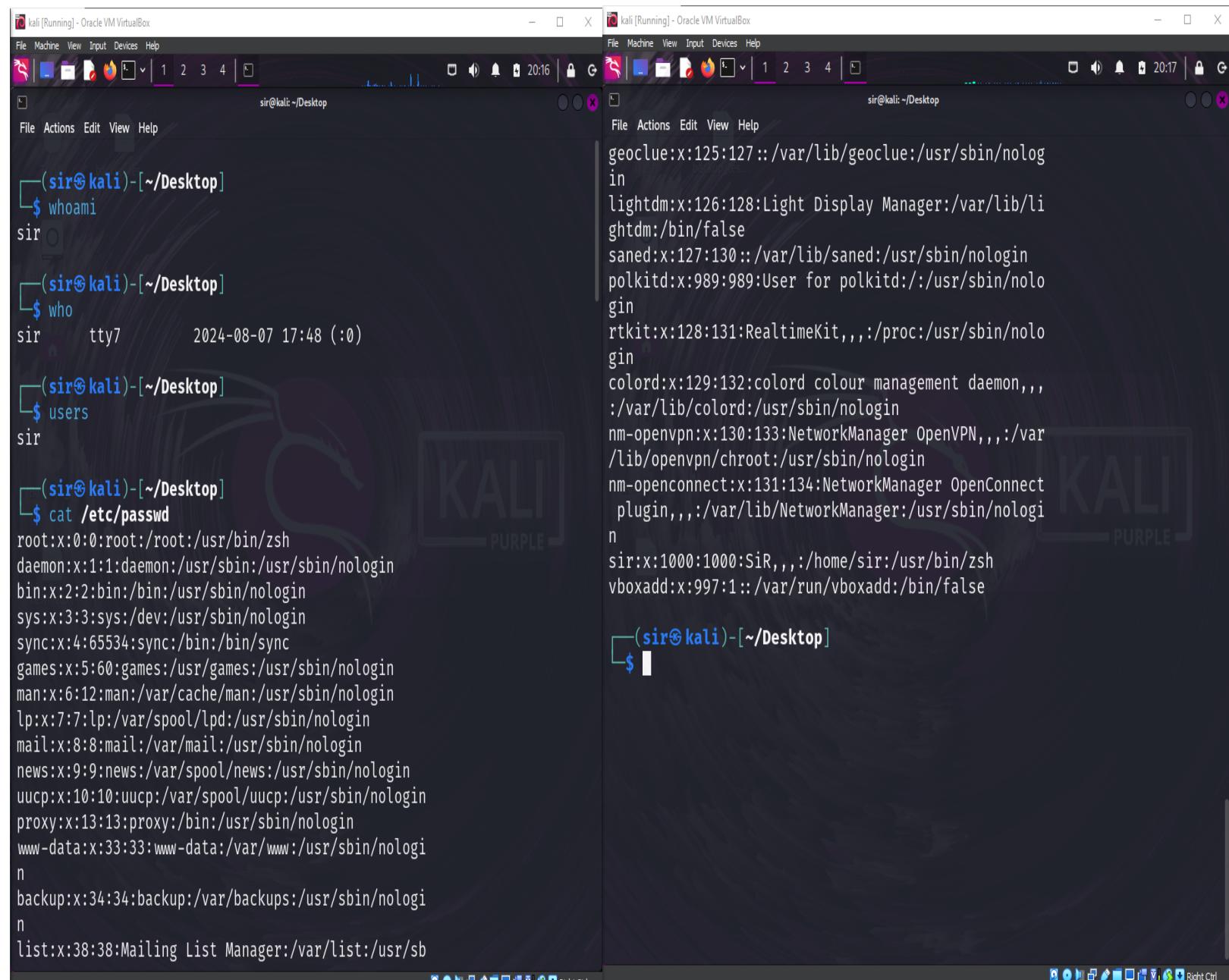


15. Write the command to remove the directory `testdir` and its contents.



Section 4: User and Group Management:

16. How can you list all existing users on the system?



The image shows a Kali Linux desktop environment with two terminal windows open. The desktop background features the Kali logo.

Terminal Window 1 (Left):

```
(sir㉿kali)-[~/Desktop]$ whoami
sir
```

Terminal Window 2 (Right):

```
(sir㉿kali)-[~/Desktop]$ who
sir    tty7        2024-08-07 17:48 (:0)

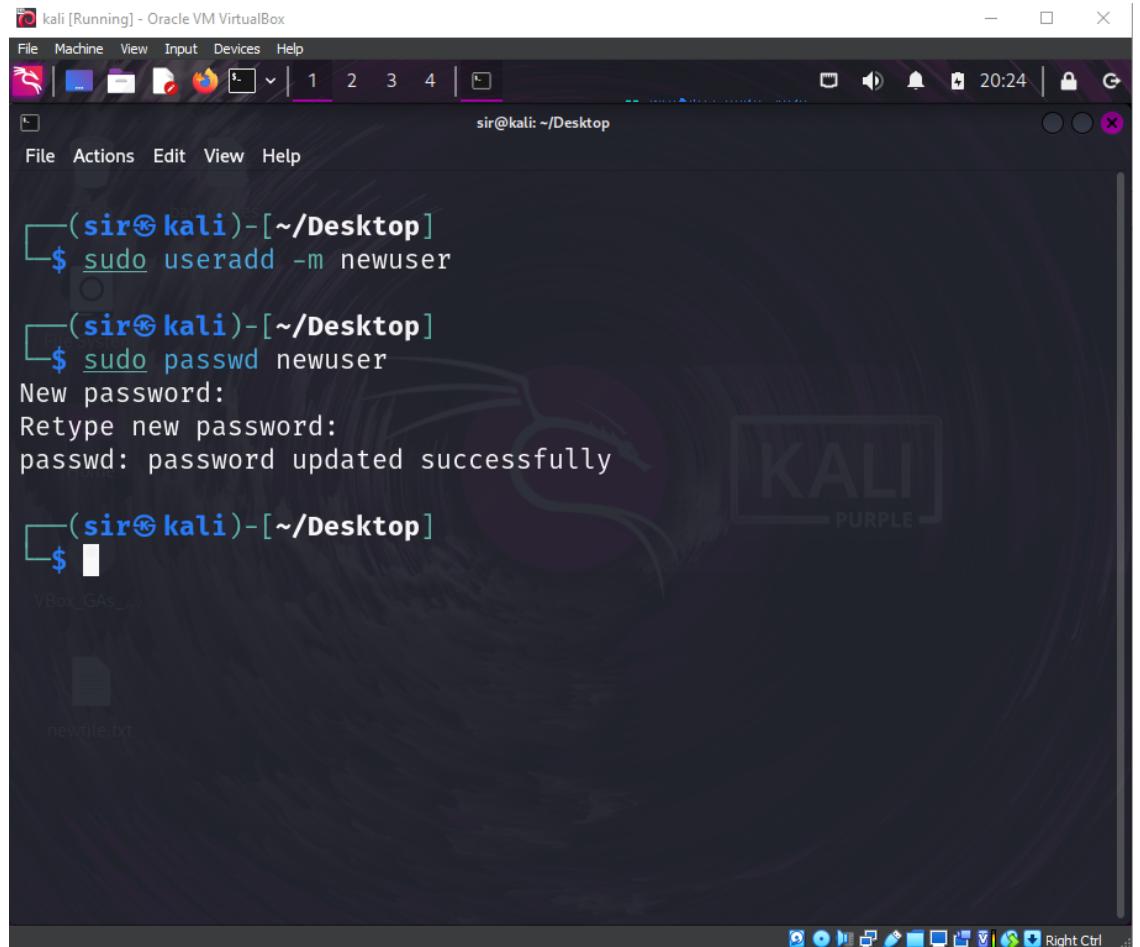
(sir㉿kali)-[~/Desktop]$ users
sir

(sir㉿kali)-[~/Desktop]$ cat /etc/passwd
root:x:0:0:root:/root:/usr/bin/zsh
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
n
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sb
```

Terminal Window 2 (Right):

```
(sir㉿kali)-[~/Desktop]$
```

17. Write the command to create a new user with the username `newuser`.



The screenshot shows a terminal window titled "kali [Running] - Oracle VM VirtualBox". The terminal session is as follows:

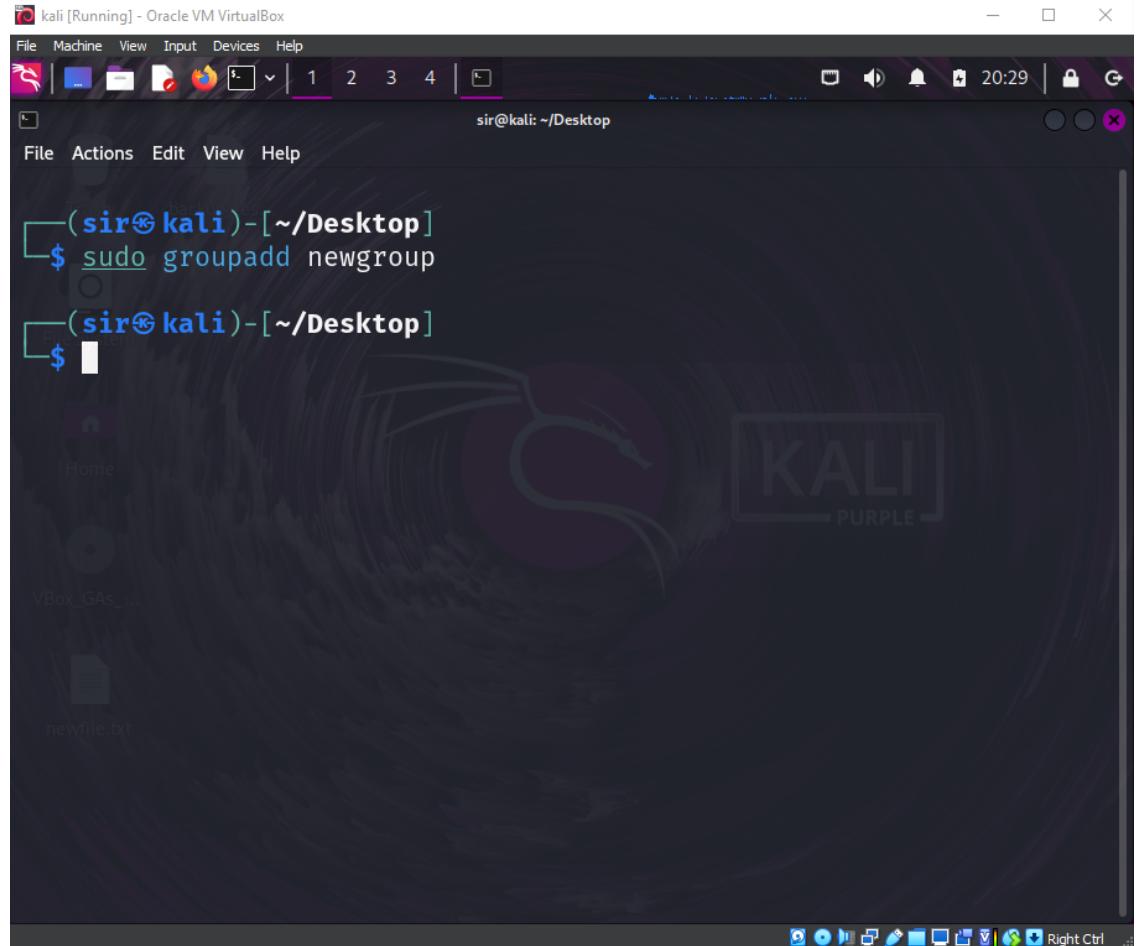
```
(sir@kali)-[~/Desktop]
$ sudo useradd -m newuser

(sir@kali)-[~/Desktop]
$ sudo passwd newuser
New password:
Retype new password:
passwd: password updated successfully

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

The desktop background features the Kali Linux logo. A file named "newfile.txt" is visible on the desktop.

18. How do you create a new group named `newgroup`

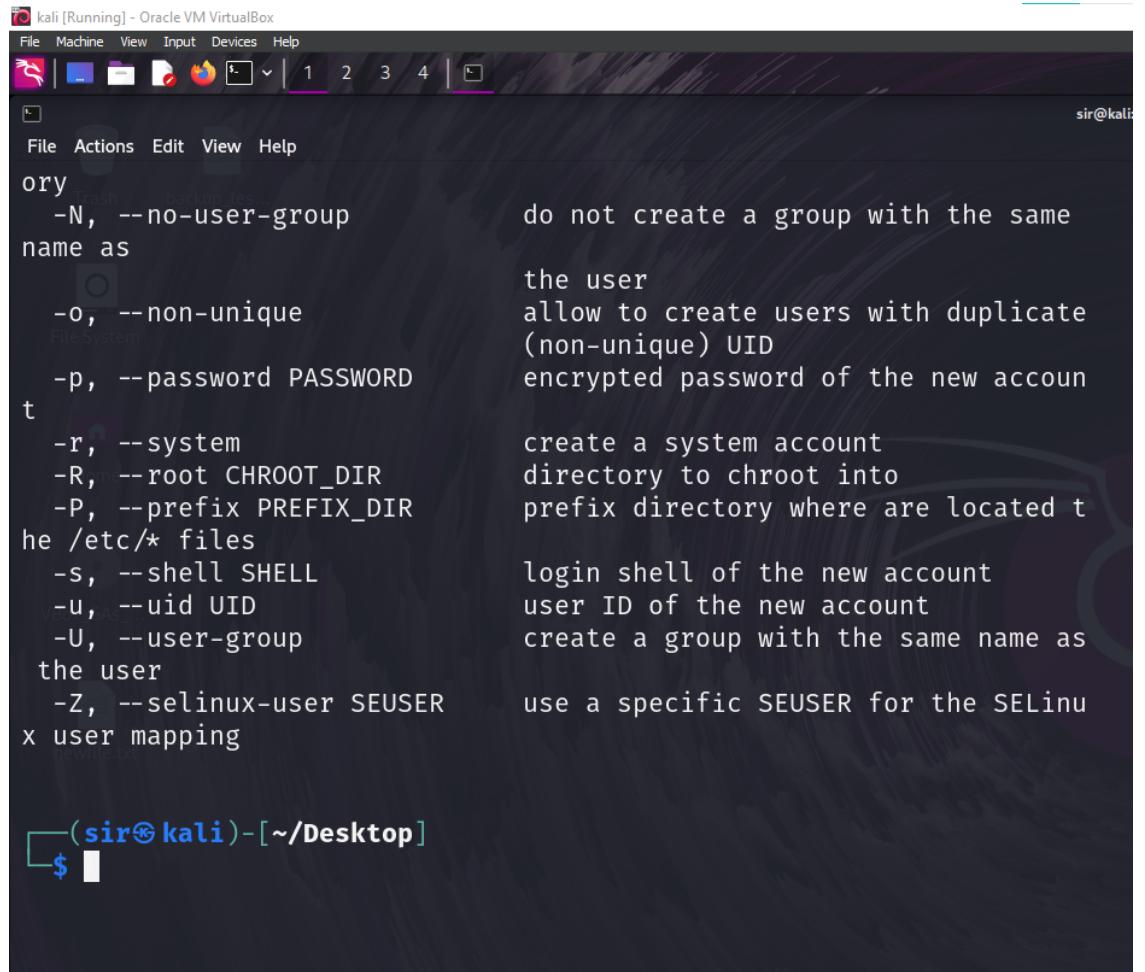


A screenshot of a Kali Linux desktop environment running in Oracle VM VirtualBox. The desktop has a dark purple theme with a large Kali logo in the center. A terminal window is open in the foreground, showing the command:

```
(sir@kali)-[~/Desktop]$ sudo groupadd newgroup
```

The terminal window is titled '(sir@kali)-[~/Desktop]' and shows the user's home directory. The desktop background features the Kali Linux logo.

19. Write the command to add the user `newuser` to the group `newgroup`



The screenshot shows a Kali Linux desktop environment with a terminal window open. The terminal displays the help documentation for the 'user' command, specifically the '-N' option which is used to create a new user. The terminal prompt is '(sir㉿kali)-[~/Desktop] \$'. The desktop background shows a dark theme with various icons and a terminal window.

```
user - Create a new user account
      -N, --no-user-group
      name as

      -o, --non-unique
      File System

      -p, --password PASSWORD
      t
      -r, --system
      -R, --root CHROOT_DIR
      -P, --prefix PREFIX_DIR
      he /etc/* files
      -s, --shell SHELL
      -u, --uid UID
      -U, --user-group
      the user
      -Z, --selinux-user SEUSER
      x user mapping
```

do not create a group with the same
the user
allow to create users with duplicate
(non-unique) UID
encrypted password of the new accoun
create a system account
directory to chroot into
prefix directory where are located t
login shell of the new account
user ID of the new account
create a group with the same name as
use a specific SEUSER for the SELinu

```
(sir㉿kali)-[~/Desktop]
$ 
```

20. What command would you use to change the password for the user `newuser`?

The screenshot shows a terminal window titled "kali [Running] - Oracle VM VirtualBox". The terminal content is as follows:

```
└─(sir㉿kali)-[~/Desktop]
$ sudo passwd newuser
New password:
Retype new password:
passwd: password updated successfully

└─(sir㉿kali)-[~/Desktop]
$ █
```

The terminal shows the user running the `sudo passwd newuser` command to change the password for the user `newuser`. The user is prompted for a new password and re-typing it. The `passwd` command indicates that the password was updated successfully. The terminal prompt then changes to show the new user `sir`.

Section 5: Practical Application:

21. . Describe the steps you would take to install a Linux distribution on a virtual machine.

- The First step I can choose two ways to install kali Linux in my PC with Virtual Box or in VMware:

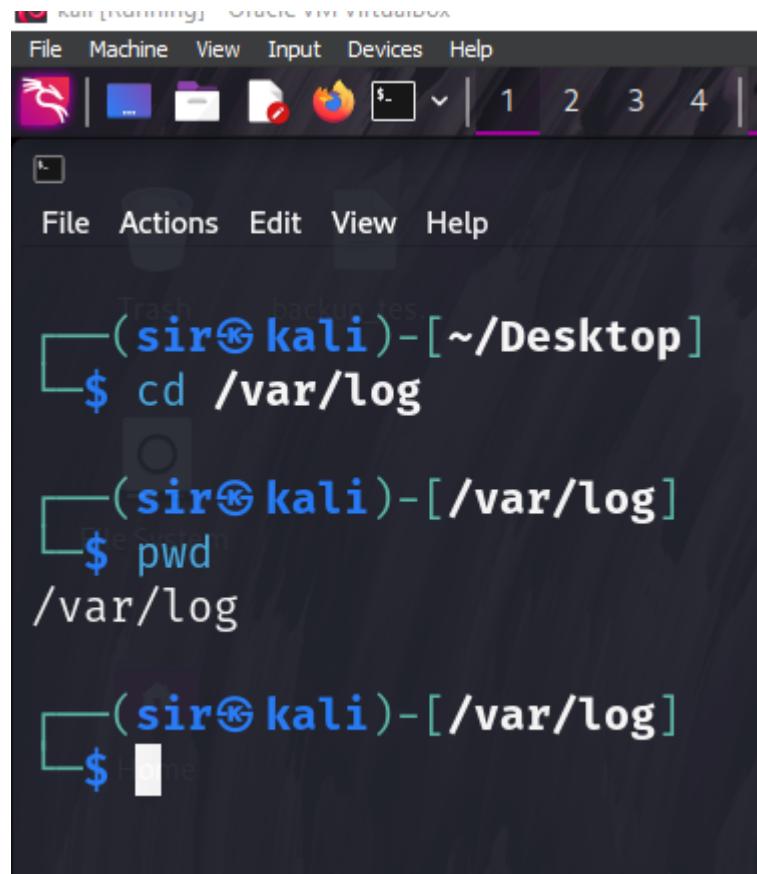
1. Firstly, Virtual Box:

- You go to the website of Virtual Box and install it.
- Then you must choose the Virtual Box of Linux it's 4 Gigabits.
- And then you must watch an excellent video to set up the settings correctly.

2. Secondly VMware:

- It's like Virtual Box from the set of settings.
- The difference between them is the facilitate to the setting.

22. If you are in the `/home/user` directory, what command would you use to navigate to `/var/log`?



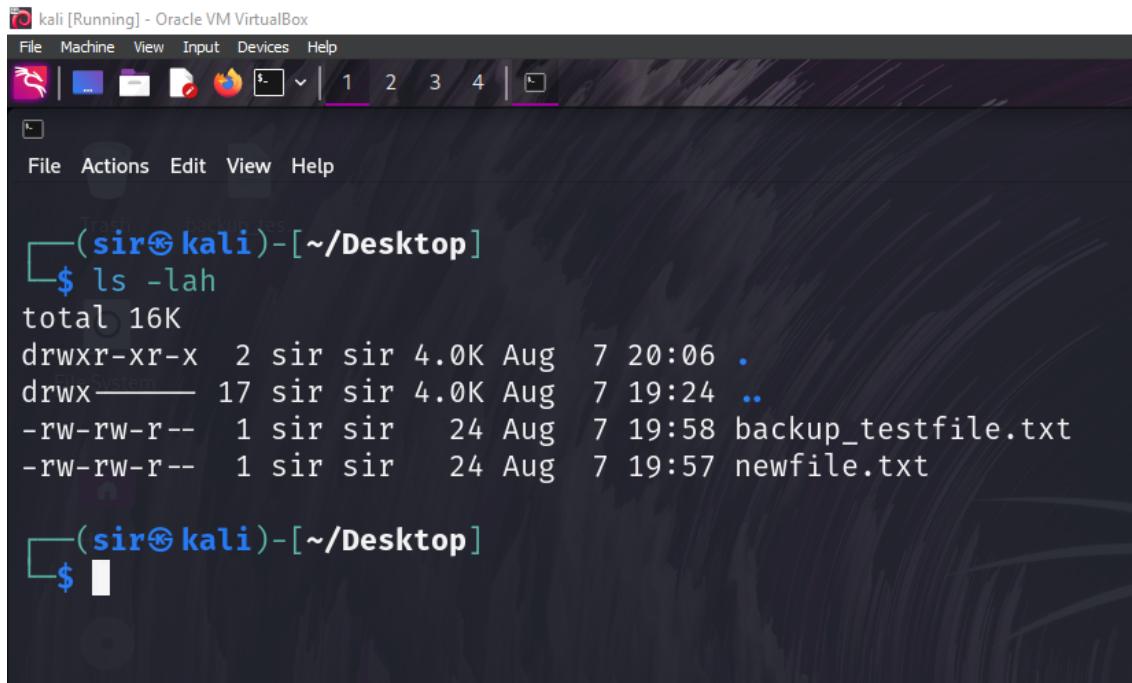
The screenshot shows a Kali Linux desktop environment with a terminal window open. The terminal window has a dark background and light-colored text. It displays the following session:

```
(sir㉿kali)-[~/Desktop]
$ cd /var/log

(sir㉿kali)-[/var/log]
$ pwd
/var/log

(sir㉿kali)-[/var/log]
$
```

23. How do you display the contents of the current directory in a human-readable format?



The screenshot shows a terminal window titled "kali [Running] - Oracle VM VirtualBox". The window has a dark theme with purple highlights. The terminal prompt is "(sir@sir)-[~/Desktop]". The user has run the command "\$ ls -lah" which lists the contents of the current directory in a long, human-readable format. The output shows three files: "total 16K", "..", "backup_testfile.txt", and "newfile.txt". The file "newfile.txt" was created on August 24 at 19:57.

```
(sir@sir)-[~/Desktop]
$ ls -lah
total 16K
drwxr-xr-x  2 sir  sir  4.0K Aug  7 20:06 .
drwxrwxr-- 17 sir  sir  4.0K Aug  7 19:24 ..
-rw-rw-r--  1 sir  sir    24 Aug  7 19:58 backup_testfile.txt
-rw-rw-r--  1 sir  sir    24 Aug  7 19:57 newfile.txt

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

24. Explain what the following command does: `cp -r /home/user/docs /home/user/docs_backup`.

1. cp = **copy** the file or dir.
2. -r = **recursive** tell the cp to copy the file or dir.
3. **/home/user/docs** = this is the source dir.
4. **/home/user/docs_backup** = this is the destination dir.

25. What is the difference between the `rm` and `rm -r` commands?

- ‘re’ = remove or delete the dir.
- ‘rm -r’ = remove or delete the dir and everything it contains (file and subdirectories).

26. Explain the significance of the `/etc` directory in Linux.

The significance of the /etc directory can be summarized as follows:

- 1. System Configuration Files:** The /etc directory is where most of the system-wide configuration files are stored.
- 2. Application Configuration Files:** In addition to system-wide configuration files, the /etc directory also houses configuration files for various applications and services installed on the system.

3. **Startup and Shutdown Scripts:** The /etc directory often contains scripts that are responsible for starting and stopping system services and daemons. These scripts are executed during the system boot and shutdown processes.
4. **Central Configuration Directory:** The /etc directory serves as a centralized location for system-wide configuration files, making it easier to manage and maintain the overall system configuration.
5. **Access Control:** The files and directories within /etc are usually owned by the root user and have restricted access permissions, ensuring that only authorized users can modify the system configuration.

Kali Linux
