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20BCE2657

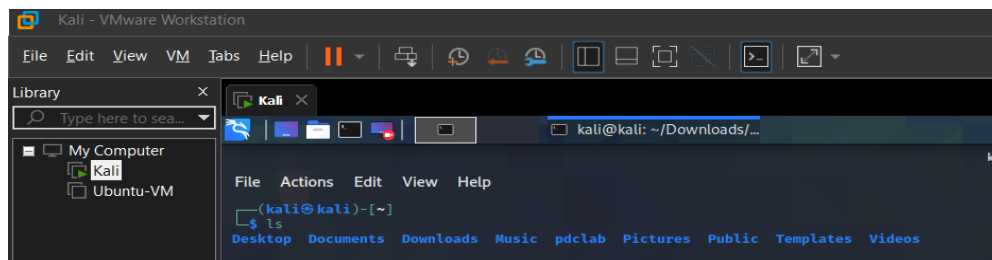# Title: Linux Command List Assessment

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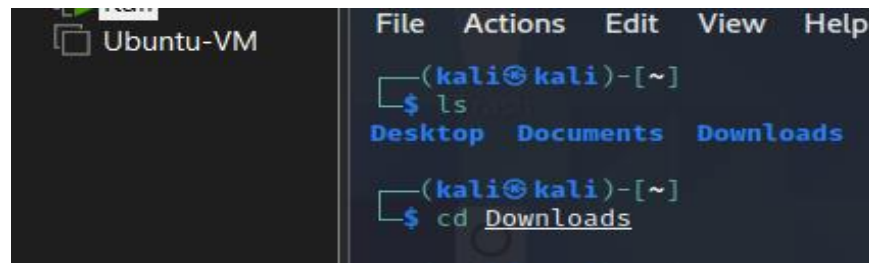
Note: It is recommended to perform this assessment on a Linux machine or virtual environment.

File and Directory Operations:
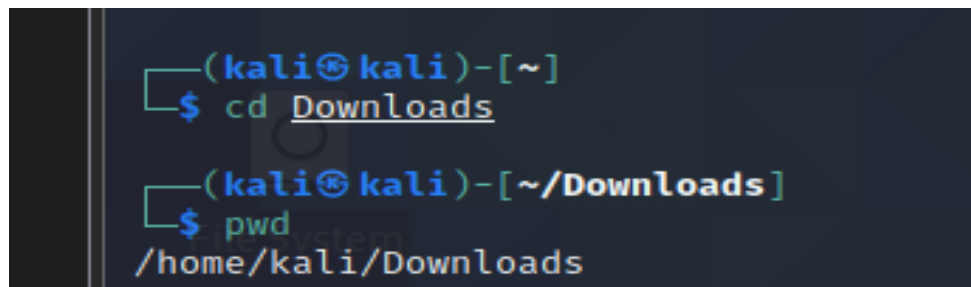
ls: List files and directories

cd: Change directory

pwd: Print working directory
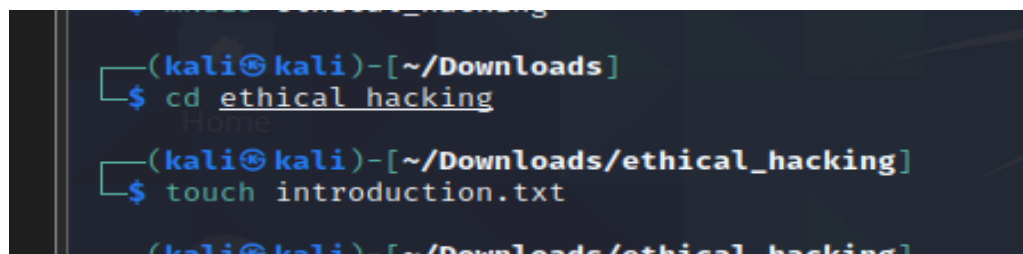
mkdir: Make directory

touch: Create an empty file

cp: Copy files and directories

```
┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ touch introduction.txt

┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ cp introduction.txt conclusion.txt
```

mv: Move or rename files and directories

```
┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ cp introduction.txt conclusion.txt

┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ mv introduction.txt intro.txt
```

rm: Remove files and directories

```
┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ mv introduction.txt intro.txt

┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ ls
conclusion.txt   intro.txt

┌──(kali㊦kali)-[~/Downloads/ethical_hacking]
└─$ rm conclusion.txt
```
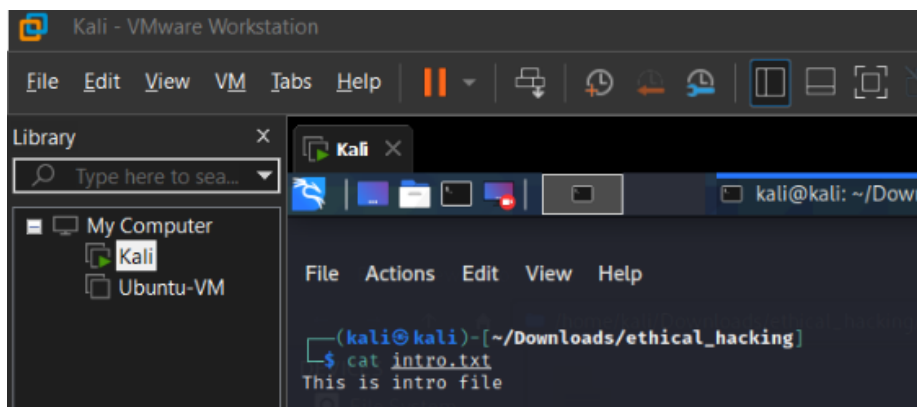
find: Search for files and directories

```
find:    ./ethical-hacking : No such file or direct
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ find -name intro.txt
./intro.txt

┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ ▮
```
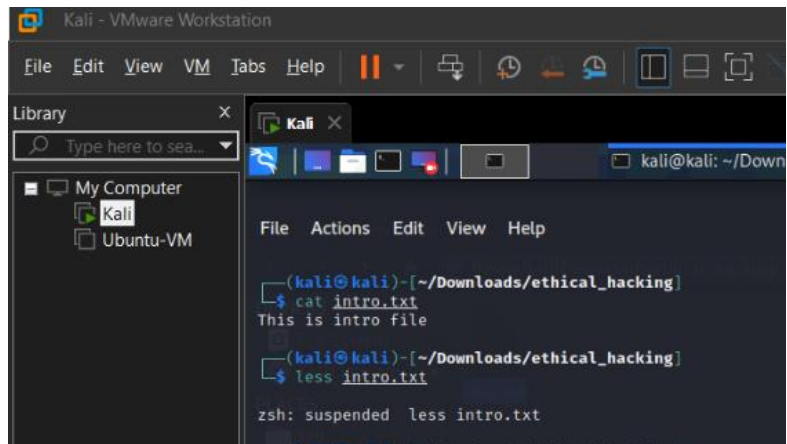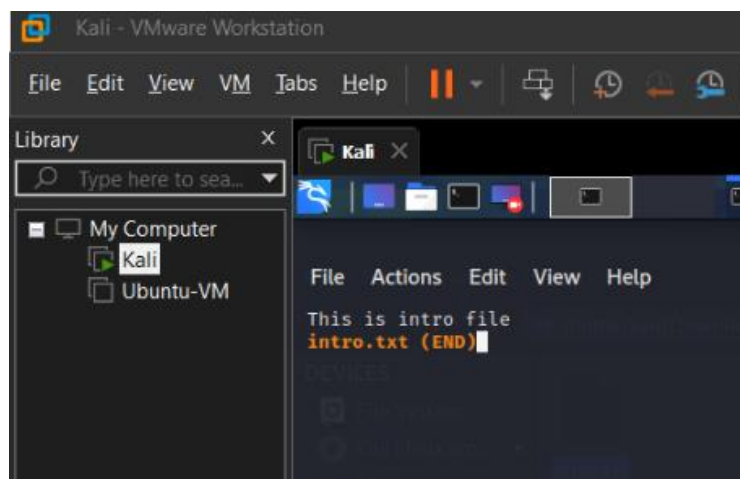
File Viewing and Editing:

cat: Concatenate and display file content

```
Kali - VMware Workstation

File  Edit  View  VM  Tabs  Help    ‖  ▾

Library                    ×    Kali  ×
  Type here to sea...  ▾
  My Computer                   kali@kali: ~/Down
    Kali
    Ubuntu-VM          File  Actions  Edit  View  Help

                       ┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
                       └─$ cat intro.txt
                       This is intro file
```

less: View file content with pagination
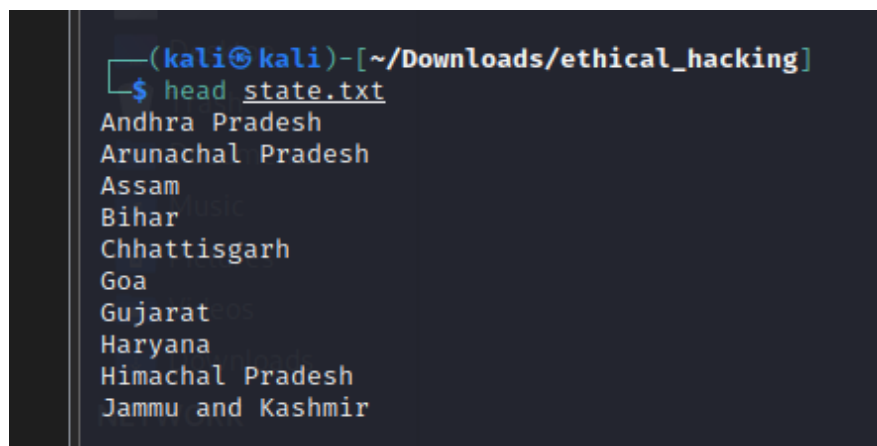
head: Display the beginning of a file


```
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ head state.txt
Andhra Pradesh
Arunachal Pradesh
Assam
Bihar
Chhattisgarh
Goa
Gujarat
Haryana
Himachal Pradesh
Jammu and Kashmir
```

tail: Display the end of a file

```
  ┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
  └─$ tail state.txt
Odisha
Punjab
Rajasthan
Sikkim
Tamil Nadu
Telangana
Tripura
Uttar Pradesh
Uttarakhand
West Bengal
  ┌──(kali㉿kali)-[~/Downloads/ethical hacking]
```

nano: Text editor for creating and editing files

```
  ┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
  └─$ nano state.txt
```

vi/vim: Powerful text editor for experienced users

```
  ┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
  └─$ vim state.txt
```
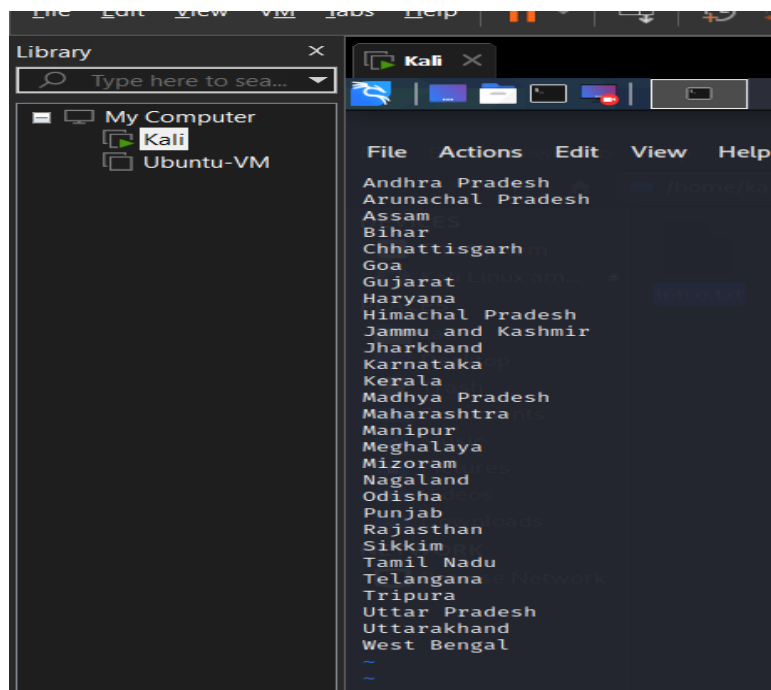
File Permissions:

chmod: Change file permissions

```
┌──(kali㊉kali)-[~/Downloads/ethical_hacking]
└─$ chmod u=rwx,g=rx,o=r intro.txt
```

chown: Change file owner

```
┌──(kali㊉kali)-[~/Downloads/ethical_hacking]
└─$ sudo chown test_user intro.txt
[sudo] password for kali:
```

chgrp: Change file group

```
┌──(kali㊉kali)-[~/Downloads/ethical_hacking]
└─$ sudo chgrp test_group intro.txt
```

File Compression and Archiving:

tar: Archive files

gzip: Compress files

unzip: Extract files from a ZIP archive

Process Management:

ps: List running processes

top: Display real-time system information and processes

.

kill: Terminate processes

bg: Run processes in the background

fg: Bring background processes to the foreground

System Information:

uname: Print system information

```
┌──(kali㊞kali)-[~/Downloads/ethical_hacking]
└─$ uname
Linux
```

df: Display disk space usage

```
┌──(kali㊞kali)-[~/Downloads/ethical_hacking]
└─$ df
Filesystem      1K-blocks     Used Available Use% Mounted on
udev              1968428        0   1968428   0% /dev
tmpfs              400416     1172    399244   1% /run
/dev/sda1        40036860 9818152  28155248  26% /
tmpfs             2002064        0   2002064   0% /dev/shm
tmpfs                5120        0      5120   0% /run/lock
tmpfs                4096        0      4096   0% /sys/fs/cgroup
tmpfs              400412       56    400356   1% /run/user/1000
```

free: Display memory usage

```
┌──(kali㊞kali)-[~/Downloads/ethical_hacking]
└─$ free
               total        used        free      shared  buff/cache   a
Mem:         4004132      528664     3048316       10020      427152
Swap:         998396           0      998396
```

uptime: Show system uptime

```
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ uptime
 23:44:34 up 47 min,  1 user,  load average: 0.00, 0.00, 0.00
```

who: Display logged-in users

```
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ free
               total        used        free      shared  buff/cache
Mem:         4004132      528664     3048316       10020      427152
Swap:         998396           0      998396
```

w: Display logged-in users and their activities

```
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ w
 23:44:45 up 47 min,  1 user,  load average: 0.00, 0.00, 0.00
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
kali     tty7     :0               22:57    47:05  7.22s  0.36s xfce4-session
```

Networking:

ss: Configure network interfaces

```
┌──(kali㉿kali)-[~/my_directory]
└─$ ss -tln
State          Recv-Q          Send-Q          Local Address:Port          Peer Address:Port          Process
```

ping: Send ICMP echo requests to a network host

```
┌──(kali㉿kali)-[~/my_directory]
└─$ ping www.google.com
PING www.google.com (142.250.194.196) 56(84) bytes of data.
64 bytes from del12s07-in-f4.1e100.net (142.250.194.196): icmp_seq=1 ttl=117 time=18.3 ms
64 bytes from 196.194.250.142.in-addr.arpa (142.250.194.196): icmp_seq=2 ttl=117 time=17.0 ms
64 bytes from 196.194.250.142.in-addr.arpa (142.250.194.196): icmp_seq=3 ttl=117 time=18.5 ms
64 bytes from 196.194.250.142.in-addr.arpa (142.250.194.196): icmp_seq=4 ttl=117 time=17.8 ms
64 bytes from 196.194.250.142.in-addr.arpa (142.250.194.196): icmp_seq=5 ttl=117 time=16.1 ms
^C
--- www.google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4007ms
rtt min/avg/max/mdev = 16.058/17.527/18.511/0.891 ms
```

ssh: Securely connect to a remote system

```
┌──(kali㉿kali)-[~/my_directory]
└─$ ssh Linux@192.168.1.2
ssh: connect to host 192.168.1.2 port 22: No route to host
```

scp: Securely copy files between systems

```
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ scp state.txt kali@122.162.64.178:/home
ssh: connect to host 122.162.64.178 port 22: Connection refused
lost connection
```

wget: Download files from the web

```
┌──(kali㉿kali)-[~/Downloads/ethical_hacking]
└─$ wget http://google.com
--2023-05-21 23:59:44--  http://google.com/
Resolving google.com (google.com)... 142.250.194.206, 2404:6800:4002:824::200e
Connecting to google.com (google.com)|142.250.194.206|:80... connected.
HTTP request sent, awaiting response ... 301 Moved Permanently
Location: http://www.google.com/ [following]
--2023-05-21 23:59:45--  http://www.google.com/
Resolving www.google.com (www.google.com)... 142.250.193.228, 2404:6800:4002:81d::2004
Connecting to www.google.com (www.google.com)|142.250.193.228|:80... connected.
HTTP request sent, awaiting response ... 200 OK
Length: unspecified [text/html]
Saving to: 'index.html'

index.html                              [ ⇔

2023-05-21 23:59:46 (826 KB/s) - 'index.html' saved [19454]
```
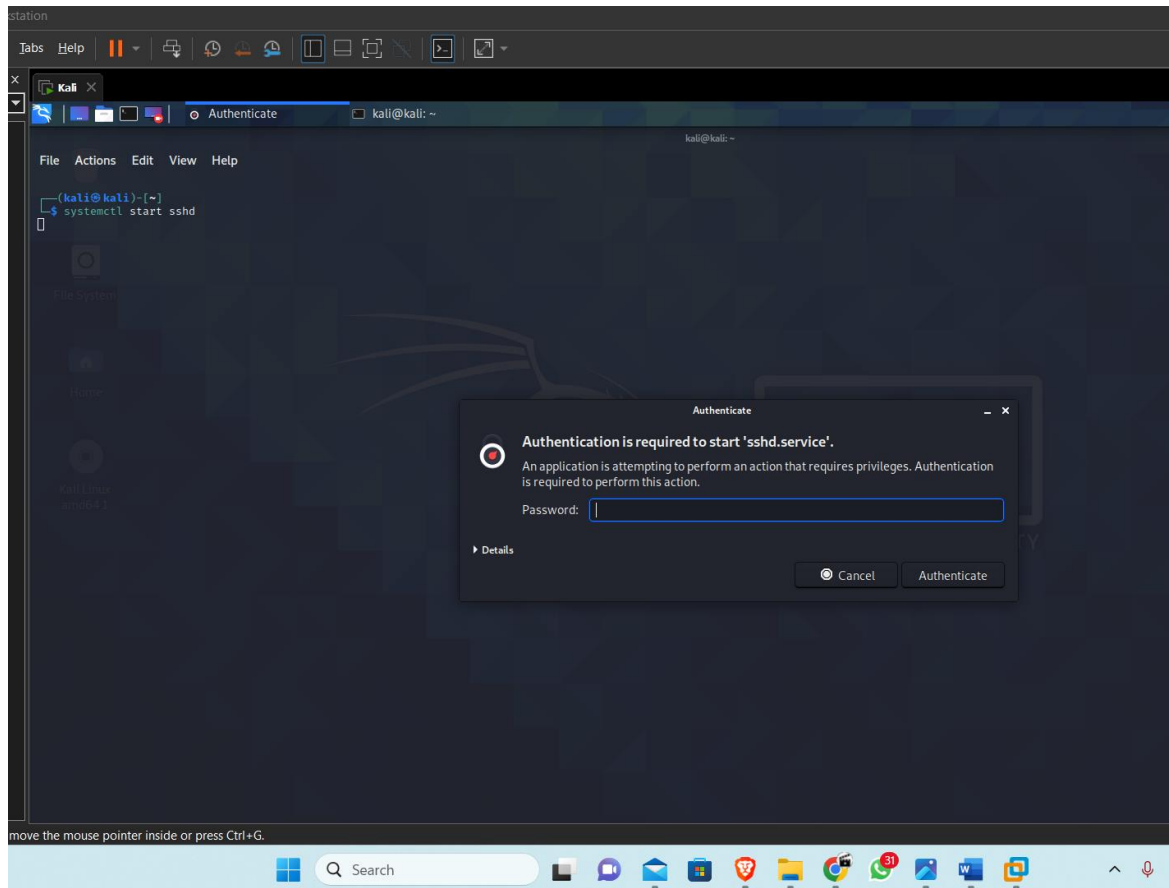
System Administration

sudo: Execute commands with superuser privileges

apt-get: Package management for Debian-based distributions

systemctl: Manage system services

crontab: Schedule recurring tasks

```
┌──(kali㊉kali)-[~]
└─$ crontab -l
no crontab for kali
```

useradd: Add a new user

```
┌──(kali㊉kali)-[~]
└─$ sudo useradd test_user
```

passwd: Change user password

```
┌──(kali㊉kali)-[~]
└─$ sudo passwd test_user
New password:
Retype new password:
passwd: password updated successfully
```