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
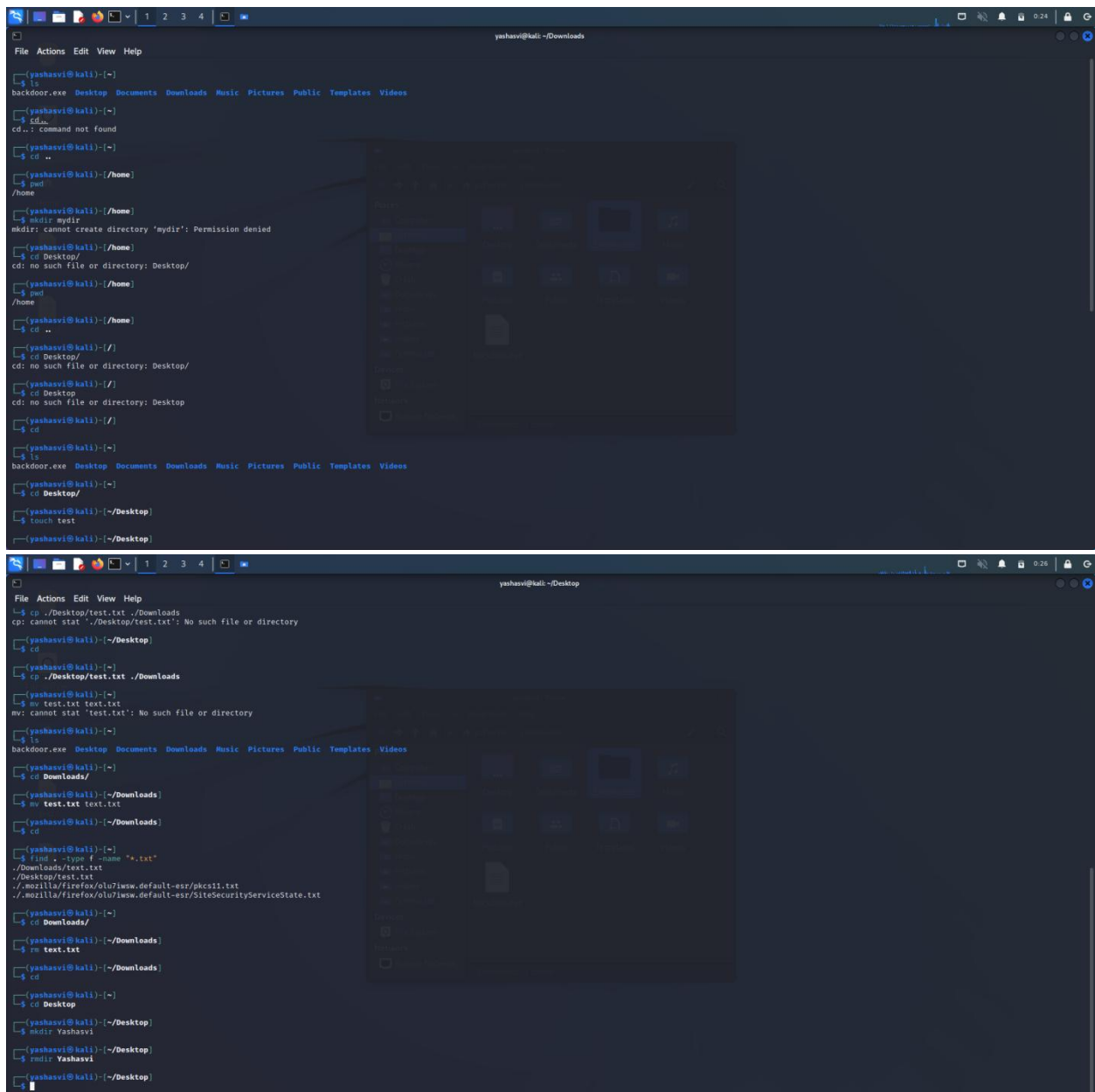mkdir: Make directory
touch: Create an empty file
cp: Copy files and directories
mv: Move or rename files and directories
rm: Remove files and directories
find: Search for files and directories

File Viewing and Editing:

cat: Concatenate and display file content
less: View file content with pagination
head: Display the beginning of a file

tail: Display the end of a file

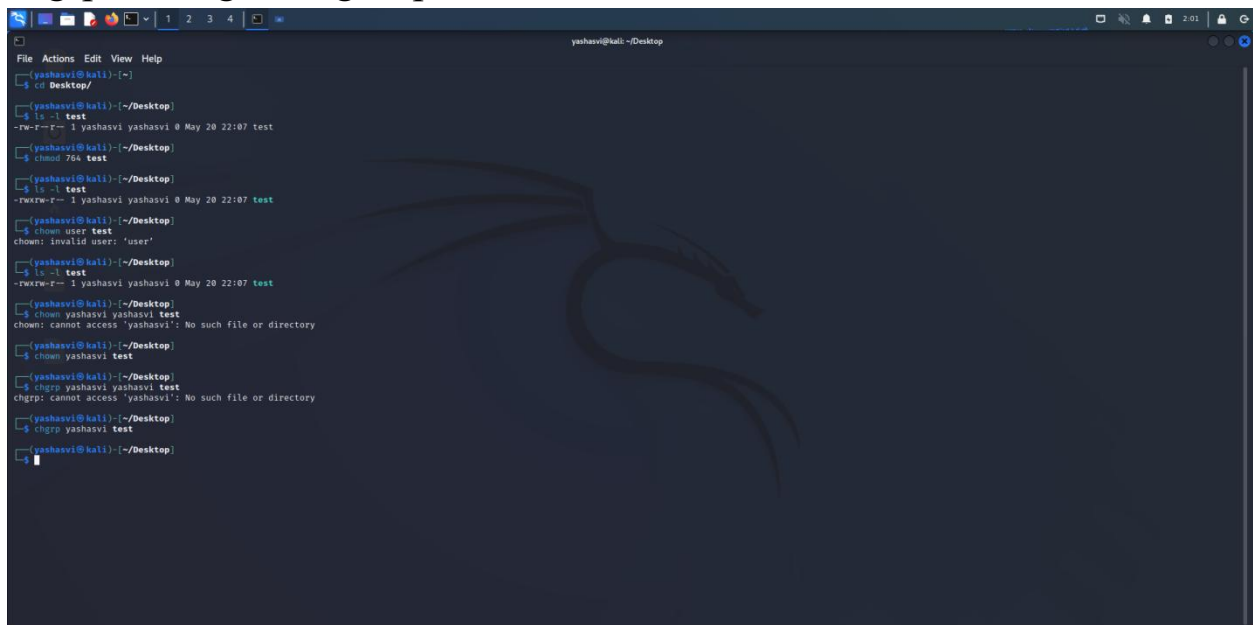nano: Text editor for creating and editing files

vi/vim: Powerful text editor for experienced users

File Permissions:

chmod: Change file permissions

chown: Change file owner

chgrp: Change file group

File Compression and Archiving:

tar: Archive files

gzip: Compress files

unzip: Extract files from a ZIP archive

```
┌──(yashasvi㉿kali)-[~]
└─$ tar xvzf file.tar.gz
tar (child): file.tar.gz: Cannot open: No such file or directory
tar (child): Error is not recoverable: exiting now
tar: Child returned status 2
tar: Error is not recoverable: exiting now

┌──(yashasvi㉿kali)-[~]
└─$ gzip mydoc.txt
gzip: mydoc.txt: No such file or directory

┌──(yashasvi㉿kali)-[~]
└─$ sudo apt install unzip
[sudo] password for yashasvi:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
unzip is already the newest version (6.0-28).
unzip set to manually installed.
The following packages were automatically installed and are no longer required:
  gir1.2-mutter-11 gir1.2-nma-1.0
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.

┌──(yashasvi㉿kali)-[~]
└─$ sudo apt autoremove
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  gir1.2-mutter-11 gir1.2-nma-1.0
0 upgraded, 0 newly installed, 2 to remove and 3 not upgraded.
After this operation, 565 kB disk space will be freed.
Do you want to continue? [Y/n] Y
(Reading database ... 415817 files and directories currently installed.)
Removing gir1.2-mutter-11:amd64 (43.3-4) ...
Removing gir1.2-nma-1.0:amd64 (1.10.6-1) ...

┌──(yashasvi㉿kali)-[~]
└─$ unzip -l webdesign.zip
unzip:  cannot find or open webdesign.zip, webdesign.zip.zip or webdesign.zip.ZIP.
```

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

```
┌──(yashasvi㉿kali)-[~]
└─$ ps
    PID TTY          TIME CMD
   2640 pts/2    00:00:06 zsh
   4488 pts/2    00:00:00 ps
top - 18:58:30 up  2:05,  2 users,  load average: 0.02, 0.05, 0.01
Tasks: 194 total,   1 running, 193 sleeping,   0 stopped,   0 zombie
%Cpu(s):  3.2 us,  1.3 sy,  0.0 ni, 95.4 id,  0.1 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem :   3780.4 total,   1964.0 free,   1319.2 used,    717.9 buff/cache
MiB Swap:    975.0 total,    975.0 free,      0.0 used.   2461.1 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND

   1520 yashasvi  20   0  402064  97660  55496 S  10.0   2.5   1:19.24 Xorg

   1756 yashasvi  20   0 3852440 280144 115632 S   5.3   7.2   1:35.26 gnome-shell

   2512 yashasvi  20   0  637668  61376  42424 S   2.0   1.6   0:18.37 gnome-terminal-

   1648 yashasvi  20   0  217984   2396   2020 S   1.0   0.1   0:58.47 VBoxClient

    184 root     -51   0       0      0      0 S   0.3   0.0   0:05.65 irq/18-vmwgfx

   1911 yashasvi  20   0  238116   9320   6556 S   0.3   0.2   0:00.92 at-spi2-registr

   4147 root      20   0       0      0      0 I   0.3   0.0   0:00.90 kworker/0:1-events

   4495 yashasvi  20   0   11784   5332   3188 R   0.3   0.1   0:00.14 top

      1 root      20   0  169176  13736   9156 S   0.0   0.4   0:05.73 systemd

      2 root      20   0       0      0      0 S   0.0   0.0   0:00.10 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

      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 slub_flushwq

      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 netns

      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri

     10 root       0 -20       0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
```

```
   10 root        0 -20        0        0        0 I   0.0    0.0    0:00.00 mm_percpu_wq
   11 root       20   0        0        0        0 I   0.0    0.0    0:00.00 rcu_tasks_kthread
   12 root       20   0        0        0        0 I   0.0    0.0    0:00.00 rcu_tasks_rude_kthread
   13 root       20   0        0        0        0 I   0.0    0.0    0:00.00 rcu_tasks_trace_kthread
   14 root       20   0        0        0        0 S   0.0    0.0    0:00.25 ksoftirqd/0
   15 root       20   0        0        0        0 I   0.0    0.0    0:02.86 rcu_preempt
   16 root       rt   0        0        0        0 S   0.0    0.0    0:00.33 migration/0
   18 root       20   0        0        0        0 S   0.0    0.0    0:00.00 cpuhp/0
   19 root       20   0        0        0        0 S   0.0    0.0    0:00.00 cpuhp/1
   20 root       rt   0        0        0        0 S   0.0    0.0    0:00.33 migration/1
   21 root       20   0        0        0        0 S   0.0    0.0    0:00.21 ksoftirqd/1
   23 root        0 -20        0        0        0 I   0.0    0.0    0:00.00 kworker/1:0H-events_highpri
   24 root       20   0        0        0        0 S   0.0    0.0    0:00.00 cpuhp/2
   25 root       rt   0        0        0        0 S   0.0    0.0    0:00.92 migration/2
   26 root       20   0        0        0        0 S   0.0    0.0    0:00.34 ksoftirqd/2
   28 root        0 -20        0        0        0 I   0.0    0.0    0:00.00 kworker/2:0H-events_highpri
   31 root       20   0        0        0        0 S   0.0    0.0    0:00.06 kdevtmpfs
   32 root        0 -20        0        0        0 I   0.0    0.0    0:00.00 inet_frag_wq
   33 root       20   0        0        0        0 S   0.0    0.0    0:00.00 kauditd
   35 root       20   0        0        0        0 S   0.0    0.0    0:00.26 khungtaskd
   36 root       20   0        0        0        0 S   0.0    0.0    0:00.00 oom_reaper
```

```
──(yashasvi㊉kali)-[~]
└─$ top

top - 18:58:47 up  2:05,  2 users,  load average: 0.09, 0.06, 0.02
Tasks: 194 total,   1 running, 193 sleeping,   0 stopped,   0 zombie
%Cpu(s):  3.5 us,  2.3 sy,  0.0 ni, 93.8 id,  0.1 wa,  0.0 hi,  0.2 si,  0.0 st
MiB Mem :   3780.4 total,   1962.8 free,   1320.4 used,    717.9 buff/cache
MiB Swap:    975.0 total,    975.0 free,      0.0 used.   2459.9 avail Mem

    PID USER       PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+ COMMAND
   1520 yashasvi   20   0  402064  97660  55496 S  12.8   2.5   1:20.54 Xorg
   1756 yashasvi   20   0 3852440 280144 115632 S   3.0   7.2   1:35.69 gnome-shell
   2512 yashasvi   20   0  637668  61112  42424 S   3.0   1.6   0:18.73 gnome-terminal-
   1648 yashasvi   20   0  217984   2396   2020 S   1.6   0.1   0:58.67 VBoxClient
   1911 yashasvi   20   0  238116   9320   6556 S   0.7   0.2   0:00.95 at-spi2-registr
    625 root       20   0  286756   3176    996 S   0.3   0.1   0:07.72 VBoxDRMClient
   1938 yashasvi   20   0  385944  13764   6716 S   0.3   0.4   0:04.87 ibus-daemon
   2297 yashasvi   20   0  234156   7004   6432 S   0.3   0.2   0:01.39 ibus-engine-sim
   3998 root       20   0       0      0      0 I   0.3   0.0   0:01.03 kworker/1:0-events
   4147 root       20   0       0      0      0 I   0.3   0.0   0:00.92 kworker/0:1-mm_percpu_wq
   4281 root       20   0       0      0      0 I   0.3   0.0   0:00.15 kworker/u6:0-events_unbound
   4442 root       20   0       0      0      0 I   0.3   0.0   0:00.33 kworker/2:0-events
   4503 yashasvi   20   0   11640   5384   3228 R   0.3   0.1   0:00.15 top
      1 root       20   0  169176  13736   9156 S   0.0   0.4   0:05.73 systemd
      2 root       20   0       0      0      0 S   0.0   0.0   0:00.10 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
```

```
    4 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 rcu_par_gp
    5 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 slub_flushwq
    6 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 netns
    8 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
   10 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 mm_percpu_wq
   11 root     20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
   12 root     20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
   13 root     20   0      0      0      0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
   14 root     20   0      0      0      0 S   0.0   0.0   0:00.26 ksoftirqd/0
   15 root     20   0      0      0      0 I   0.0   0.0   0:02.87 rcu_preempt
   16 root     rt   0      0      0      0 S   0.0   0.0   0:00.33 migration/0
   18 root     20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/0
   19 root     20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/1
   20 root     rt   0      0      0      0 S   0.0   0.0   0:00.33 migration/1
   21 root     20   0      0      0      0 S   0.0   0.0   0:00.21 ksoftirqd/1
   23 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 kworker/1:0H-events_highpri
   24 root     20   0      0      0      0 S   0.0   0.0   0:00.00 cpuhp/2
   25 root     rt   0      0      0      0 S   0.0   0.0   0:00.93 migration/2
   26 root     20   0      0      0      0 S   0.0   0.0   0:00.34 ksoftirqd/2
   28 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 kworker/2:0H-events_highpri
   31 root     20   0      0      0      0 S   0.0   0.0   0:00.06 kdevtmpfs
   32 root      0 -20      0      0      0 I   0.0   0.0   0:00.00 inet_frag_wq
```

```
┌──(yashasvi⊗kali)-[~]
└─$ kill
kill: not enough arguments

┌──(yashasvi⊗kali)-[~]
└─$ bg
bg: no current job

┌──(yashasvi⊗kali)-[~]
└─$ fg
fg: no current job

┌──(yashasvi⊗kali)-[~]
└─$
```

System Information:

uname: Print system information
df: Display disk space usage
free: Display memory usage
uptime: Show system uptime
who: Display logged-in users
w: Display logged-in users and their activities

```
┌──(yashasvi㉿kali)-[~]
└─$ uname -a
Linux kali 6.1.0-kali9-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.27-1kali1 (2023-05-12) x86_64 GNU/Linux

┌──(yashasvi㉿kali)-[~]
└─$ df
Filesystem     1K-blocks     Used Available Use% Mounted on
udev             1895584        0   1895584   0% /dev
tmpfs             387112     1208    385904   1% /run
/dev/sda1       40070424 14195428 23807336  38% /
tmpfs            1935540        0   1935540   0% /dev/shm
tmpfs               5120        0      5120   0% /run/lock
tmpfs             387108       84    387024   1% /run/user/1000

┌──(yashasvi㉿kali)-[~]
└─$ free
              total        used        free      shared  buff/cache   available
Mem:        3871084     1303260     2059152        1508      734704     2567824
Swap:        998396           0      998396

┌──(yashasvi㉿kali)-[~]
└─$ uptime
 18:55:43 up  2:02,  2 users,  load average: 0.21, 0.08, 0.02

┌──(yashasvi㉿kali)-[~]
└─$ who
yashasvi :1           2023-05-30 15:57 (:1)
yashasvi pts/1        2023-05-30 15:57

┌──(yashasvi㉿kali)-[~]
└─$ w
 18:55:55 up  2:02,  2 users,  load average: 0.18, 0.08, 0.02
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
yashasvi :1       :1               15:57    ?xdm?  4:33   0.03s /usr/libexec/gdm-x-session --run-script /usr/bin/gnome-session
yashasvi pts/1    -                15:57    2:54m  1.34s  0.12s sudo su

┌──(yashasvi㉿kali)-[~]
└─$ 
```

Networking:

ifconfig: Configure network interfaces
ping: Send ICMP echo requests to a network host
ssh: Securely connect to a remote system
scp: Securely copy files between systems
wget: Download files from the web

System Administration:

sudo: Execute commands with superuser privileges

apt-get: Package management for Debian-based distributions

yum: Package management for Red Hat-based distributions

systemctl: Manage system services

crontab: Schedule recurring tasks

useradd: Add a new user

passwd: Change user password

```
┌──(yashasvi㉿kali)-[~]
└─$ sudo apt-get upgrade && sudo apt-get update
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  gir1.2-mutter-11 gir1.2-nma-1.0
Use 'sudo apt autoremove' to remove them.
The following packages have been kept back:
  gnome-control-center gnome-control-center-data libmutter-11-0
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
Hit:1 http://kali.download/kali kali-rolling InRelease
Reading package lists... Done
```

Ensure that you provide the correct command(s) used to accomplish each task. Write your answers below each task.

Once you have completed the assessment, review your answers and verify that the output or results are correct.

Make this in document format and send them with images