Title: Linux Command List Assignment-1

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.

File and Directory Operations:

ls: List files and directories

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

cd: Change directory

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

pwd: Print working directory

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

mkdir: Make directory

```
┌──(kali㉿kali)-[~/Documents]
└─$ mkdir my_directory
```

touch: Create an empty file

```
┌──(kali㉿kali)-[~/Documents]
└─$ touch myfile.txt
```

cp: Copy files and directories

```
┌──(kali㉿kali)-[~/Documents]
└─$ cp myfile.txt /home/kali/Downloads
```

```
┌──(kali㉿kali)-[~/Documents]
└─$ cp -r my_directory /home/kali/Downloads
```

mv: Move or rename files and directories

```
┌──(kali㉿kali)-[~/Documents]
└─$ mv myfile.txt /home/kali/Downloads
```

```
┌──(kali㉿kali)-[~/Documents]
└─$ mv my_directory /home/kali/Downloads
```

rm: Remove files and directories

```
┌──(kali㉿kali)-[~/Downloads]
└─$ rm myfile.txt
```

```
┌──(kali㉿kali)-[~/Downloads]
└─$ rm -r my_directory
```

find: Search for files and directories

```
┌──(kali㉿kali)-[~/Downloads]
└─$ find /home -name myfile.txt
/home/kali/Downloads/myfile.txt
```

File Viewing and Editing:

cat: Concatenate and display file content

```
┌──(kali㉿kali)-[~/Downloads]
└─$ cat myfile.txt
suiiiiiii
```

less: View file content with pagination

```
┌──(kali㉿kali)-[~/Downloads]
└─$ less myfile.txt

suiiiiiii


~
~
~
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~
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~
~
(END)
```

head: Display the beginning of a file

```
┌──(kali㉿kali)-[~/Downloads]
└─$ head myfile.txt
suiiiiiii
```

tail: Display the end of a file

```
┌──(kali㉿kali)-[~/Downloads]
└─$ tail myfile.txt
suiiiiiii



krishna ronaldo
```

nano: Text editor for creating and editing files

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

```
  GNU nano 7.2                           myfile.txt *
hi my name is suiii




```

vi/vim: Powerful text editor for experienced users

```
┌──(kali㉿kali)-[~]
└─$ vi myfile,txt
```

File Permissions:

chmod: Change file permissions

```
┌──(kali㉿kali)-[~/Downloads]
└─$ chmod 755 myfile.txt
```

chown: Change file owner

```
┌──(kali㉿kali)-[~/Downloads]
└─$ chown kali myfile.txt
```

chgrp: Change file group

```
┌──(kali㉿kali)-[~/Downloads]
└─$ chgrp kali myfile.txt
```

File Compression and Archiving:

tar: Archive files

```
┌──(kali㉿kali)-[~/Downloads]
└─$ tar -cvf archive.tar myfile.txt
myfile.txt
```

gzip: Compress files

```
┌──(kali㉿kali)-[~/Downloads]
└─$ gzip myfile.txt
```

unzip: Extract files from a ZIP archive

```
└$ unzip myfilee
Archive:  myfilee
  End-of-central-directory signature not found.  Either this file is not
  a zipfile, or it constitutes one disk of a multi-part archive.  In the
  latter case the central directory and zipfile comment will be found on
  the last disk(s) of this archive.
Archive:  myfilee.zip
replace myfilee? [y]es, [n]o, [A]ll, [N]one, [r]ename: r
new name: mfyyf
 extracting: mfyyf
```

Process Management:

ps: List running processes

```
┌──(kali㉿kali)-[~/Downloads]
└$ ps aux
USER          PID %CPU %MEM    VSZ    RSS TTY      STAT START   TIME COMMAND
root            1  0.0  0.4 167744 12132 ?        Ss   12:37   0:01 /sbin/init
root            2  0.0  0.0      0     0 ?        S    12:37   0:00 [kthreadd]
root            3  0.0  0.0      0     0 ?        I<   12:37   0:00 [rcu_gp]
root            4  0.0  0.0      0     0 ?        I<   12:37   0:00 [rcu_par_g
root            5  0.0  0.0      0     0 ?        I<   12:37   0:00 [slub_flus
root            6  0.0  0.0      0     0 ?        I<   12:37   0:00 [netns]
root            8  0.0  0.0      0     0 ?        I<   12:37   0:00 [kworker/0
root           10  0.0  0.0      0     0 ?        I<   12:37   0:00 [mm_percpu
root           11  0.0  0.0      0     0 ?        I    12:37   0:00 [rcu_tasks
root           12  0.0  0.0      0     0 ?        I    12:37   0:00 [rcu_tasks
root           13  0.0  0.0      0     0 ?        I    12:37   0:00 [rcu_tasks
root           14  0.0  0.0      0     0 ?        S    12:37   0:00 [ksoftirqd
root           15  0.0  0.0      0     0 ?        I    12:37   0:04 [rcu_preem
root           16  0.0  0.0      0     0 ?        S    12:37   0:00 [migration
root           18  0.0  0.0      0     0 ?        S    12:37   0:00 [cpuhp/0]
root           19  0.0  0.0      0     0 ?        S    12:37   0:00 [cpuhp/1]
root           20  0.0  0.0      0     0 ?        S    12:37   0:00 [migration
root           21  0.0  0.0      0     0 ?        S    12:37   0:00 [ksoftirqd
root           24  0.0  0.0      0     0 ?        S    12:37   0:00 [cpuhp/2]
root           25  0.0  0.0      0     0 ?        S    12:37   0:00 [migration
root           26  0.0  0.0      0     0 ?        S    12:37   0:00 [ksoftirqd
root           27  0.0  0.0      0     0 ?        I    12:37   0:05 [kworker/2
root           28  0.0  0.0      0     0 ?        I<   12:37   0:00 [kworker/2
root           32  0.0  0.0      0     0 ?        S    12:37   0:00 [kdevtmpfs
```

top: Display real-time system information and
processes

```
┌──(kali㉿kali)-[~/Downloads]
└─$ top
top - 14:50:33 up  2:12,  1 user,  load average: 0.49, 0.21, 0.19
Tasks: 155 total,   1 running, 154 sleeping,   0 stopped,   0 zombie
%Cpu(s):  2.1 us,  1.4 sy,  0.0 ni, 96.3 id,  0.1 wa,  0.0 hi,  0.1 si,  0.0
MiB Mem :   2929.2 total,   1876.2 free,    777.4 used,    433.9 buff/cache
MiB Swap:   1024.0 total,   1024.0 free,      0.0 used.   2151.8 avail Mem

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+
    571 root      20   0  449012 120784  62900 S   5.3   4.0   1:43.23
  40242 kali      20   0  456120 102112  83152 S   1.7   3.4   0:01.54
    889 kali      20   0  217960   2448   2104 S   0.7   0.1   0:34.18
    939 kali      20   0  585788 100180  77468 S   0.7   3.3   0:26.11
    970 kali      20   0  231508  29244  19412 S   0.7   1.0   0:01.64
    993 kali      20   0  207076  34624  19072 S   0.7   1.2   0:17.77
    987 kali      20   0  461836  82124  40272 S   0.3   2.7   0:07.10
    994 kali      20   0  340000  28984  17728 S   0.3   1.0   0:00.33
    995 kali      20   0  350296  30712  20800 S   0.3   1.0   0:13.02
   1075 kali      20   0  192516  26676  17228 S   0.3   0.9   0:00.51
      1 root      20   0  167744  12132   9024 S   0.0   0.4   0:01.16
      2 root      20   0       0      0      0 S   0.0   0.0   0:00.01
      3 root       0 -20       0      0      0 I   0.0   0.0   0:00.00
      4 root       0 -20       0      0      0 I   0.0   0.0   0:00.00
      5 root       0 -20       0      0      0 I   0.0   0.0   0:00.00
      6 root       0 -20       0      0      0 I   0.0   0.0   0:00.00
      8 root       0 -20       0      0      0 I   0.0   0.0   0:00.00
```

kill: Terminate processes

```
┌──(kali㉿kali)-[~]
└─$ kill 965
```

bg: Run processes in the background

```
┌──(kali㉿kali)-[~/Downloads]
└─$ command &
[1] 44555
[1]  + done       command
```

fg: Bring background processes to the foreground

```
┌──(kali㉿kali)-[~/Downloads]
└─$ fg
fg: no current job
```

System Information:

uname: Print system information

```
┌──(kali㊀kali)-[~/Downloads]
└─$ uname -a
Linux kali 6.1.0-kali5-amd64 #1 SMP PREEMPT_DYNAMIC Debian 6.1.12-1kali2 (202
3-02-23) x86_64 GNU/Linux
```

df: Display disk space usage

```
┌──(kali㊀kali)-[~/Downloads]
└─$ df -h
Filesystem      Size  Used Avail Use% Mounted on
udev            1.4G     0  1.4G   0% /dev
tmpfs           293M  912K  293M   1% /run
/dev/sda1        79G   13G   62G  18% /
tmpfs           1.5G     0  1.5G   0% /dev/shm
tmpfs           5.0M     0  5.0M   0% /run/lock
tmpfs           293M   84K  293M   1% /run/user/1000
```

free: Display memory usage

```
┌──(kali㊀kali)-[~/Downloads]
└─$ free -m
               total        used        free      shared  buff/cache   availa
ble
Mem:            2929         797        1856          10         433        2
131
Swap:           1023           0        1023
```

uptime: Show system uptime

```
┌──(kali㊀kali)-[~/Downloads]
└─$ uptime
 14:54:38 up  2:16,  1 user,  load average: 0.03, 0.16, 0.17
```

who: Display logged-in users

```
┌──(kali㊀kali)-[~/Downloads]
└─$ who
kali       tty7                 2023-05-28 12:38 (:0)
```

w: Display logged-in users and their activities

```
┌──(kali㉿kali)-[~/Downloads]
└─$ w
 14:55:13 up  2:17,  1 user,  load average: 0.02, 0.14, 0.16
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
kali     tty7     :0               12:38    2:17m  1:49   0.52s xfce4-sessio
```

Networking:

ifconfig: Configure network interfaces

```
┌──(kali㉿kali)-[~/Downloads]
└─$ 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::b036:c6e3:d0d2:ac5e  prefixlen 64  scopeid 0×20<link>
        ether 08:00:27:c7:e1:36  txqueuelen 1000  (Ethernet)
        RX packets 1  bytes 590 (590.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 33  bytes 4964 (4.8 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 0×10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 4  bytes 240 (240.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 4  bytes 240 (240.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

ping: Send ICMP echo requests to a network host

```
┌──(kali㉿kali)-[~/Downloads]
└─$ ping google.com
PING google.com (142.250.183.174) 56(84) bytes of data.
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=1 ttl=52
time=81.4 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=2 ttl=52
time=104 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=3 ttl=52
time=24.7 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=4 ttl=52
time=148 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=5 ttl=52
time=68.4 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=6 ttl=52
time=90.8 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=7 ttl=52
time=115 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=8 ttl=52
time=138 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=9 ttl=52
time=57.7 ms
64 bytes from bom07s32-in-f14.1e100.net (142.250.183.174): icmp_seq=10 ttl=52
 time=79.7 ms
```

ssh: Securely connect to a remote system

```
┌──(kali㊙kali)-[~/Downloads]
└─$ ssh kali@192.168.0.7
```

scp: Securely copy files between systems

```
┌──(kali㊙kali)-[~]
└─$ scp myfilee.txt kali@192.168.0.7:/C:/Windows/System64/
```

wget: Download files from the web

```
┌──(kali㊙kali)-[~]
└─$ wget http://www.google.com/
--2023-05-28 15:00:10--  http://www.google.com/
Resolving www.google.com (www.google.com)... 172.217.174.228, 2404:6800:4009:
801::2004
Connecting to www.google.com (www.google.com)|172.217.174.228|:80... connecte
d.
HTTP request sent, awaiting response ... 200 OK
Length: unspecified [text/html]
Saving to: 'index.html'

index.html                 [ ⟺                    ]  19.05K  --.-KB/s    in 0s

2023-05-28 15:00:10 (118 MB/s) - 'index.html' saved [19509]
```

System Administration:

sudo: Execute commands with superuser privileges

```
┌──(kali㊙kali)-[~/Downloads]
└─$ sudo su
[sudo] password for kali:
┌──(root㊙kali)-[/home/kali/Downloads]
└─#
```

apt-get: Package management for Debian-based distributions

```
┌──(root㉿kali)-[/home/kali/Downloads]
└─# apt-get update
Get:1 http://kali.download/kali kali-rolling InRelease [41.2 kB]
Get:2 http://kali.download/kali kali-rolling/main amd64 Packages [19.3 MB]
Get:3 http://kali.download/kali kali-rolling/main amd64 Contents (deb) [44.7
MB]
Get:4 http://kali.download/kali kali-rolling/contrib amd64 Packages [115 kB]
Get:5 http://kali.download/kali kali-rolling/contrib amd64 Contents (deb) [17
2 kB]
Get:6 http://kali.download/kali kali-rolling/non-free amd64 Packages [217 kB]
Get:7 http://kali.download/kali kali-rolling/non-free amd64 Contents (deb) [9
28 kB]
Fetched 65.4 MB in 26s (2,554 kB/s)
Reading package lists ... Done
```

yum: Package management for Red Hat-based distributions

```
┌──(root㉿kali)-[/home/kali/Downloads]
└─# yum info vsftpd
Command 'yum' not found, did you mean:
  command 'sum' from deb coreutils
  command 'num' from deb quickcal
  command 'zum' from deb perforate
  command 'uum' from deb freewnn-jserver
Try: apt install <deb name>
```

systemctl: Manage system services

```
┌──(root㉿kali)-[/home/kali/Downloads]
└─# systemctl list-unit-files --type service -all
UNIT FILE                              STATE        PRESET
apache-htcacheclean.service            disabled     disabled
apache-htcacheclean@.service           disabled     disabled
apache2.service                        disabled     disabled
apache2@.service                       disabled     disabled
apparmor.service                       disabled     disabled
apt-daily-upgrade.service              static       -
apt-daily.service                      static       -
atftpd.service                         indirect     disabled
auth-rpcgss-module.service             static       -
autovt@.service                        alias        -
avahi-daemon.service                   disabled     disabled
blueman-mechanism.service              disabled     disabled
bluetooth.service                      disabled     disabled
colord.service                         static       -
console-getty.service                  disabled     disabled
console-setup.service                  enabled      enabled
container-getty@.service               static       -
cron.service                           enabled      enabled
cryptdisks-early.service               masked       disabled
cryptdisks.service                     masked       disabled
```

crontab: Schedule recurring tasks

```
┌──(root💀kali)-[/home/kali/Downloads]
└─# crontab -e
no crontab for root - using an empty one

Select an editor.  To change later, run 'select-editor'.
  1. /bin/nano        ←── easiest
  2. /usr/bin/vim.basic
  3. /usr/bin/vim.tiny

Choose 1-3 [1]: k
Choose 1-3 [1]: 1
No modification made
```

useradd: Add a new user

```
┌──(root💀kali)-[/home/kali/Downloads]
└─# useradd new
```

passwd: Change user password

```
┌──(root💀kali)-[/home/kali/Downloads]
└─# passwd new
New password:
Retype new password:
passwd: password updated successfully
```

Submitted by:

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VIT-AP