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

cd: Change directory

pwd: Print working directory

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

```
┌──(kali㊉kali)-[~/Downloads]
└─$ cat myfile.txt
suiiiiiii
```

less: View file content with pagination

```
┌──(kali㊉kali)-[~/Downloads]
└─$ less myfile.txt
```

```
suiiiiiii


~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
(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

```
┌──(kali㊀kali)-[~/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

```
┌──(kali㊉kali)-[~/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

```
┌──(kali㊉kali)-[~]
└─$ kill 965
```

bg: Run processes in the background

```
┌──(kali㊉kali)-[~/Downloads]
└─$ command &
[1] 44555
[1]  + done          command
```

fg: Bring background processes to the foreground

```
┌──(kali㊉kali)-[~/Downloads]
└─$ fg
fg: no current job
```

System Information:

uname: Print system information

```
┌──(kali㉿kali)-[~/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

```
┌──(kali㉿kali)-[~/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

```
┌──(kali㉿kali)-[~/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

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

who: Display logged-in users

```
┌──(kali㉿kali)-[~/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

```
┌──(kali㊉kali)-[~/Downloads]
└─$ ssh kali@192.168.0.7
```

scp: Securely copy files between systems

```
┌──(kali㊉kali)-[~]
└─$ scp myfilee.txt kali@192.168.0.7:/C:/Windows/System64/
```

wget: Download files from the web

```
┌──(kali㊉kali)-[~]
└─$ 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

```
┌──(kali㊉kali)-[~/Downloads]
└─$ sudo su
[sudo] password for kali:
┌──(root㊉kali)-[/home/kali/Downloads]
└─#
```

apt-get: Package management for Debian-based distributions

yum: Package management for Red Hat-based distributions

systemctl: Manage system services

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 :

Name: CH GHANA SYAM SAI VARMA

Reg.no.: 20BCD7129