20BCE1210-VISHNURAM G

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

```
┌──(gvr㉿EXCALIBUR)-[~]
└─$ pwd
/home/gvr

┌──(gvr㉿EXCALIBUR)-[~]
└─$ ls
Desktop     Downloads    Pictures    Templates       Videos
Documents   Music        Public      'Tor Browser'

┌──(gvr㉿EXCALIBUR)-[~]
└─$ cd Desktop

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ mkdir example

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ ls
example

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ touch sample.txt

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ ls
example  sample.txt

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ find sample.txt
sample.txt

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ ls
example  sample.txt

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ rm sample.txt

┌──(gvr㉿EXCALIBUR)-[~/Desktop]
└─$ ls
example
```

```
┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ cp ~/Desktop/sample.txt ~/Downloads/

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls
example   sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls ~/Downloads/
sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ rm sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls
example

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ mv ~/Downloads/sample.txt ~/Desktop/

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls
example   sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls ~/Downloads/
```

```
┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls
example

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ rmdir example/

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls
```

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

```
┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ touch sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ ls
sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ vim sample.txt

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ cat sample.txt
hi, this is a sample

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ head sample.txt
hi, this is a sample

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ tail sample.txt
hi, this is a sample

┌──(gvr💀EXCALIBUR)-[~/Desktop]
└─$ less sample.txt
```

File Permissions:

chmod: Change file permissions
chown: Change file owner
chgrp: Change file group

```
  ┌──(gvr㉿EXCALIBUR)-[~/Desktop]
  └─$ ls -l
total 4
-rw-r--r-- 1 gvr gvr 21 May 22 18:32 sample.txt

  ┌──(gvr㉿EXCALIBUR)-[~/Desktop]
  └─$ chmod +rwx sample.txt

  ┌──(gvr㉿EXCALIBUR)-[~/Desktop]
  └─$ ls -l
total 4
-rwxr-xr-x 1 gvr gvr 21 May 22 18:32 sample.txt

  ┌──(gvr㉿EXCALIBUR)-[~/Desktop]
  └─$ chown gvr sample.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

```
gvr@EXCALIBUR: /mnt/c/Coll  ×    +  ∨                              —   □   ×

  ┌─(gvr⑤EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ ps
   PID TTY          TIME CMD
     9 pts/0    00:00:00 bash
   108 pts/0    00:00:00 ps

  ┌─(gvr⑤EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ top
  top — 19:56:10 up  1:54,  0 user,  load average: 0.00, 0.00, 0.00
  Tasks:   6 total,   1 running,   5 sleeping,   0 stopped,   0 zombi
  %Cpu(s):  0.0 us,  0.0 sy,  0.0 ni,100.0 id,  0.0 wa,  0.0 hi,  0.0
  MiB Mem :   3753.9 total,   3212.3 free,    460.0 used,    233.2 bu
  MiB Swap:   1024.0 total,   1024.0 free,      0.0 used.   3294.0 av

    PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM
      1 root      20   0    2324   1504   1404 S   0.0   0.0
      4 root      20   0    2324      4      0 S   0.0   0.0
      7 root      20   0    2328    108      0 S   0.0   0.0
      8 root      20   0    2344    112      0 S   0.0   0.0
      9 gvr       20   0    7360   4168   3404 S   0.0   0.1
    109 gvr       20   0   11568   4940   3036 R   0.0   0.1


  ┌─(gvr⑤EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ kill 9

  ┌─(gvr⑤EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ ps
   PID TTY          TIME CMD
     9 pts/0    00:00:00 bash
   128 pts/0    00:00:00 ps
```

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


```
  ┌──(gvr☺EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ uname
Linux

  ┌──(gvr☺EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ df
Filesystem      1K-blocks       Used  Available Use% Mounted on
none              1922016          4    1922012   1% /mnt/wsl
none            498542916  228612220  269930696  46% /usr/lib/wsl/drivers
none              1922016          0    1922016   0% /usr/lib/wsl/lib
/dev/sdc        263112772   76919112  172755504  31% /
none              1922016        472    1921544   1% /mnt/wslg
rootfs            1918772       1936    1916836   1% /init
none              1918800          0    1918800   0% /dev
none              1922016          0    1922016   0% /run
none              1922016          0    1922016   0% /run/lock
none              1922016          0    1922016   0% /run/shm
none              1922016          0    1922016   0% /run/user
tmpfs             1922016          0    1922016   0% /sys/fs/cgroup
none              1922016         72    1921944   1% /mnt/wslg/versions.txt
none              1922016         72    1921944   1% /mnt/wslg/doc
drvfs           498542916  228612220  269930696  46% /mnt/c

  ┌──(gvr☺EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ who

  ┌──(gvr☺EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ w
 20:00:28 up  1:58,  0 user,  load average: 0.02, 0.01, 0.00
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
```

```
▭ gvr@EXCALIBUR: /mnt/c/Coll  ✕    +   ∨                                    —   □   ✕

  ┌─(gvr❂EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ uptime
 20:00:53 up  1:58,  0 user,  load average: 0.02, 0.01, 0.00

  ┌─(gvr❂EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ free
                total          used          free        shared  buff/cache
     available
 Mem:        3844036        506056       3226156          2708       267288
      3337980
 Swap:       1048576             0       1048576
```

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

```
▭ gvr@EXCALIBUR: /mnt/c/Coll  ✕    +   ∨                                                              —   ▢   ✕

  ┌─(gvr❂EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ ping google.com
 PING google.com (142.250.182.142) 56(84) bytes of data.
 64 bytes from maa05s22-in-f14.1e100.net (142.250.182.142): icmp_seq=1 ttl=53 time=66.9 ms
 64 bytes from maa05s22-in-f14.1e100.net (142.250.182.142): icmp_seq=2 ttl=53 time=55.2 ms
 64 bytes from maa05s22-in-f14.1e100.net (142.250.182.142): icmp_seq=3 ttl=53 time=55.5 ms
 64 bytes from maa05s22-in-f14.1e100.net (142.250.182.142): icmp_seq=4 ttl=53 time=50.6 ms
 ^C
 --- google.com ping statistics ---
 4 packets transmitted, 4 received, 0% packet loss, time 3005ms
 rtt min/avg/max/mdev = 50.621/57.059/66.901/6.003 ms

  ┌─(gvr❂EXCALIBUR)-[/mnt/c/College/current/CSE3502/theory]
  └─$ ifconfig
 eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
         inet 172.22.171.203  netmask 255.255.240.0  broadcast 172.22.175.255
         inet6 fe80::215:5dff:fe3d:ab57  prefixlen 64  scopeid 0x20<link>
         ether 00:15:5d:3d:ab:57  txqueuelen 1000  (Ethernet)
         RX packets 828  bytes 118534 (115.7 KiB)
         RX errors 0  dropped 0  overruns 0  frame 0
         TX packets 68  bytes 5552 (5.4 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 0x10<host>
         loop  txqueuelen 1000  (Local Loopback)
         RX packets 0  bytes 0 (0.0 B)
         RX errors 0  dropped 0  overruns 0  frame 0
         TX packets 0  bytes 0 (0.0 B)
         TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

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