

ITW Assignment-1:

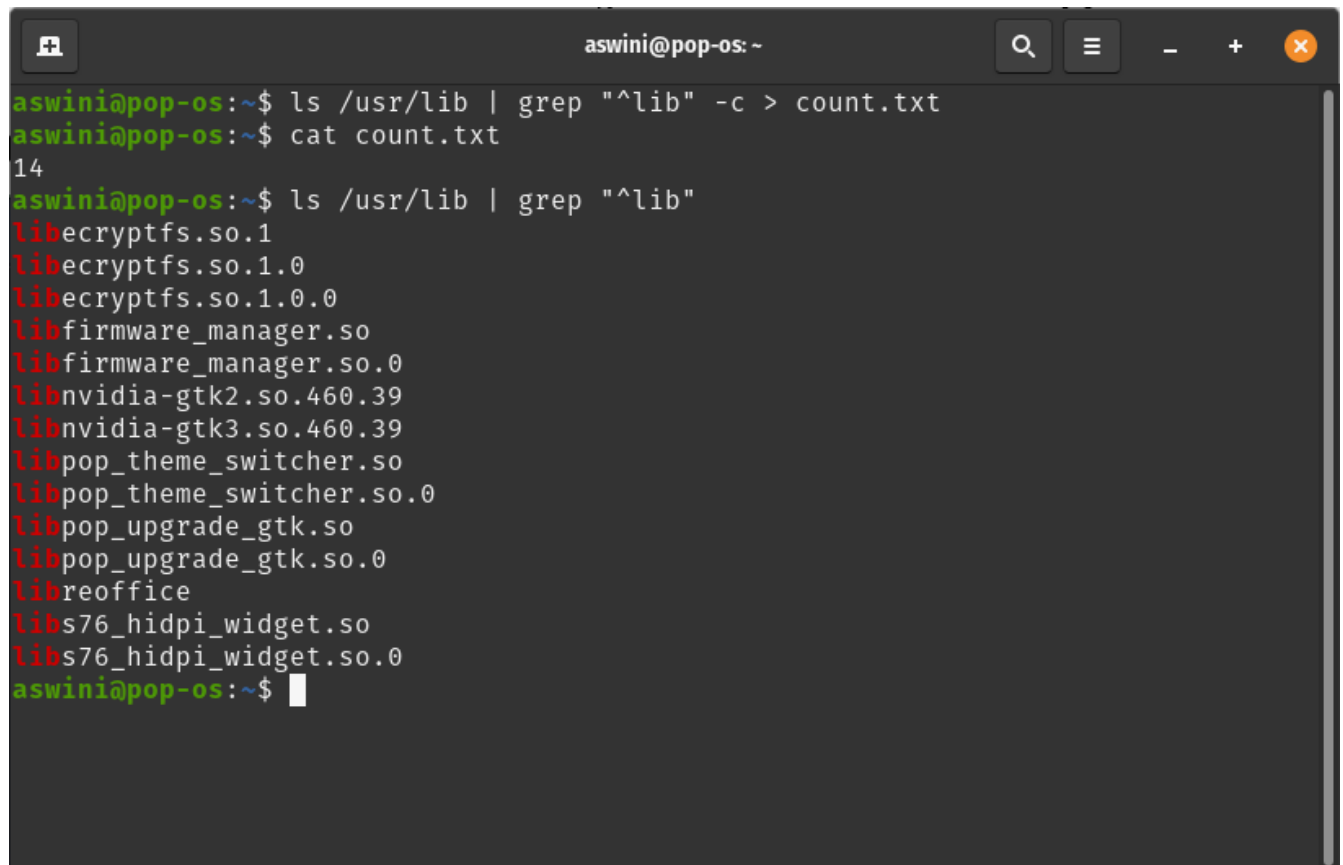
Name: P Aswini Kumar

Roll No.: 20075062

Branch: Computer Science and Engineering

Ques 1: Count the total number of files in the directory /usr/lib starting with 'lib' and print output in a count.txt file

Ans:



```
aswini@pop-os: ~  
aswini@pop-os:~$ ls /usr/lib | grep "^lib" -c > count.txt  
aswini@pop-os:~$ cat count.txt  
14  
aswini@pop-os:~$ ls /usr/lib | grep "^lib"  
libcryptfs.so.1  
libcryptfs.so.1.0  
libcryptfs.so.1.0.0  
libfirmware_manager.so  
libfirmware_manager.so.0  
libnvidia-gtk2.so.460.39  
libnvidia-gtk3.so.460.39  
libpop_theme_switcher.so  
libpop_theme_switcher.so.0  
libpop_upgrade_gtk.so  
libpop_upgrade_gtk.so.0  
libreoffice  
libs76_hidpi_widget.so  
libs76_hidpi_widget.so.0  
aswini@pop-os:~$
```

Ques 2: List all hidden files in your home directory and save it in a list.txt file in decreasing order of their word count.

Ans:

```
aswini@pop-os: ~  
aswini@pop-os:~$ ls -d .* -1 > list.txt  
aswini@pop-os:~$ cat list.txt  
.  
..  
.bash_history  
.bash_logout  
.bashrc  
.cache  
.config  
.gitconfig  
.gnupg  
.local  
.mozilla  
.npm  
.pam_environment  
.pipewire-media-session  
.pki  
.profile  
.ssh  
.sudo_as_admin_successful  
.vscode  
aswini@pop-os:~$
```

```
list.txt  
1 .  
2 ..  
3 .bash_history  
4 .bash_logout  
5 .bashrc  
6 .cache  
7 .config  
8 .gitconfig  
9 .gnupg  
10 .local  
11 .mozilla  
12 .npm  
13 .pam_environment  
14 .pipewire-media-session  
15 .pki  
16 .profile  
17 .ssh  
18 .sudo_as_admin_successful  
19 .vscode  
  
Plain Text Tab Width: 8 Ln 17, Col 5 INS
```

Ques 3: List all the processes belonging to root & output in a processes.txt file
Ans:

```
Activities Terminal + Apr 20 3:35 AM
aswini@pop-os:~$ ps -U root -u root -u root > processes.txt
aswini@pop-os:~$ cat processes.txt
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  0.1 168796 11676 ?        Ss   01:46   0:02 /sbin/init splash
root         2  0.0  0.0      0   0 ?        S    01:46   0:00 [kthreadd]
root         3  0.0  0.0      0   0 ?        I<   01:46   0:00 [rcu_gp]
root         4  0.0  0.0      0   0 ?        I<   01:46   0:00 [rcu_par_gp]
root         6  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/0:0H-kblockd]
root         9  0.0  0.0      0   0 ?        I<   01:46   0:00 [mm_percpu_wq]
root        10  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/0]
root        11  0.0  0.0      0   0 ?        I    01:46   0:06 [rcu_sched]
root        12  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/0]
root        13  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/0]
root        14  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/0]
root        15  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/1]
root        16  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/1]
root        17  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/1]
root        18  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/1]
root        20  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/1:0H-kblockd]
root        21  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/2]
root        22  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/2]
root        23  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/2]
root        24  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/2]
root        26  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/2:0H-events_highpri]
root        27  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/3]
root        28  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/3]
root        29  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/3]
root        30  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/3]
root        32  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/3:0H]
root        33  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/4]
root        34  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/4]
root        35  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/4]
root        36  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/4]
root        38  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/4:0H-kblockd]
root        39  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/5]
root        40  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/5]
root        41  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/5]
root        42  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/5]
root        44  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/5:0H-events_highpri]
root        45  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/6]
root        46  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/6]
root        47  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/6]
root        48  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/6]
root        50  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/6:0H-events_highpri]
root        51  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/7]
root        52  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/7]
root        53  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/7]
root        54  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/7]
root        56  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/7:0H-kblockd]
root        57  0.0  0.0      0   0 ?        S    01:46   0:00 [kdevtmpfs]
```

```
Activities Text Editor + Apr 20 3:36 AM
processes.txt
Save
1 USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
2 root         1  0.0  0.1 168796 11676 ?        Ss   01:46   0:02 /sbin/init splash
3 root         2  0.0  0.0      0   0 ?        S    01:46   0:00 [kthreadd]
4 root         3  0.0  0.0      0   0 ?        I<   01:46   0:00 [rcu_gp]
5 root         4  0.0  0.0      0   0 ?        I<   01:46   0:00 [rcu_par_gp]
6 root         6  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/0:0H-kblockd]
7 root         9  0.0  0.0      0   0 ?        I<   01:46   0:00 [mm_percpu_wq]
8 root        10  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/0]
9 root        11  0.0  0.0      0   0 ?        I    01:46   0:06 [rcu_sched]
10 root       12  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/0]
11 root       13  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/0]
12 root       14  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/0]
13 root       15  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/1]
14 root       16  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/1]
15 root       17  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/1]
16 root       18  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/1]
17 root       20  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/1:0H-kblockd]
18 root       21  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/2]
19 root       22  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/2]
20 root       23  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/2]
21 root       24  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/2]
22 root       26  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/2:0H-events_highpri]
23 root       27  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/3]
24 root       28  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/3]
25 root       29  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/3]
26 root       30  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/3]
27 root       32  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/3:0H]
28 root       33  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/4]
29 root       34  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/4]
30 root       35  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/4]
31 root       36  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/4]
32 root       38  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/4:0H-kblockd]
33 root       39  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/5]
34 root       40  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/5]
35 root       41  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/5]
36 root       42  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/5]
37 root       44  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/5:0H-events_highpri]
38 root       45  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/6]
39 root       46  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/6]
40 root       47  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/6]
41 root       48  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/6]
42 root       50  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/6:0H-events_highpri]
43 root       51  0.0  0.0      0   0 ?        S    01:46   0:00 [cpuhp/7]
44 root       52  0.0  0.0      0   0 ?        S    01:46   0:00 [idle_inject/7]
45 root       53  0.0  0.0      0   0 ?        S    01:46   0:00 [migration/7]
46 root       54  0.0  0.0      0   0 ?        S    01:46   0:00 [ksoftirqd/7]
47 root       56  0.0  0.0      0   0 ?        I<   01:46   0:00 [kworker/7:0H-kblockd]
48 root       57  0.0  0.0      0   0 ?        S    01:46   0:00 [kdevtmpfs]
49 root       58  0.0  0.0      0   0 ?        I<   01:46   0:00 [netns]
50 root       59  0.0  0.0      0   0 ?        S    01:46   0:00 [rcu_tasks_kthre]
51 root       60  0.0  0.0      0   0 ?        S    01:46   0:00 [rcu_tasks_rude_]
52 root       61  0.0  0.0      0   0 ?        S    01:46   0:00 [rcu_tasks_trace]
53 root       62  0.0  0.0      0   0 ?        S    01:46   0:00 [kauditd]
54 root       65  0.0  0.0      0   0 ?        S    01:46   0:00 [khungtaskd]
```

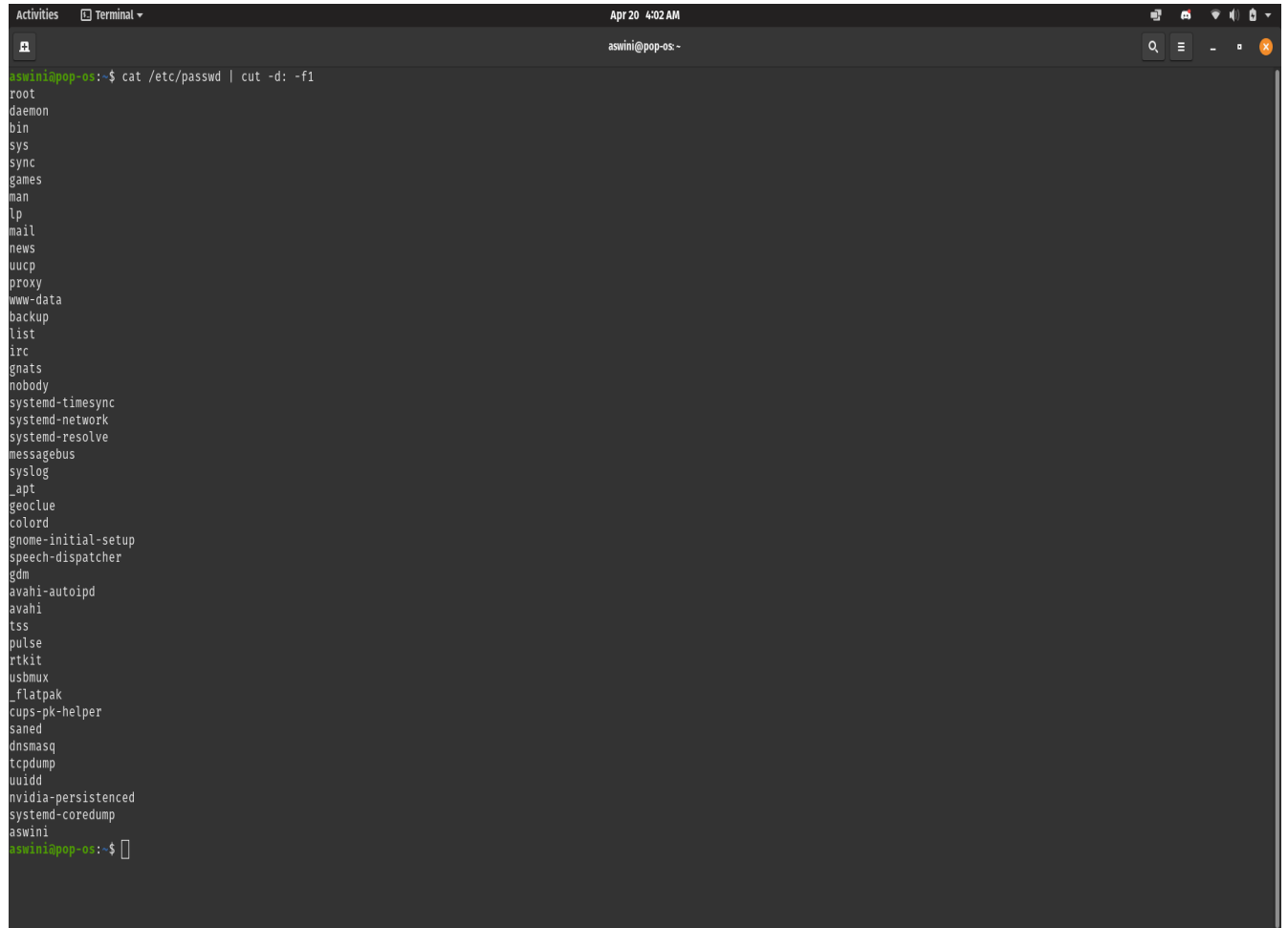
Ques 4: Given an input file, write a command sequence to find the count of each word.

Ans:

```
aswini@pop-os: ~  
aswini@pop-os:~$ cat answer.txt | grep "\w*[a-zA-Z]*\w" -o | sort | uniq -c  
1 am  
1 Ashwini  
2 Aswini  
1 but  
1 call  
2 hello  
1 Hello  
1 here  
2 i  
1 it  
1 Kumar  
1 m  
1 me  
1 misspell  
1 P  
2 people  
1 say  
2 Some  
2 to  
1 world  
aswini@pop-os:~$ cat answer.txt  
Hello i am P Aswini Kumar  
Some people call me Aswini  
Some people misspell it to Ashwini  
but hello world i m here to say hello  
aswini@pop-os:~$
```

Ques 5: How will you print the login names of all users on a system?

Ans:

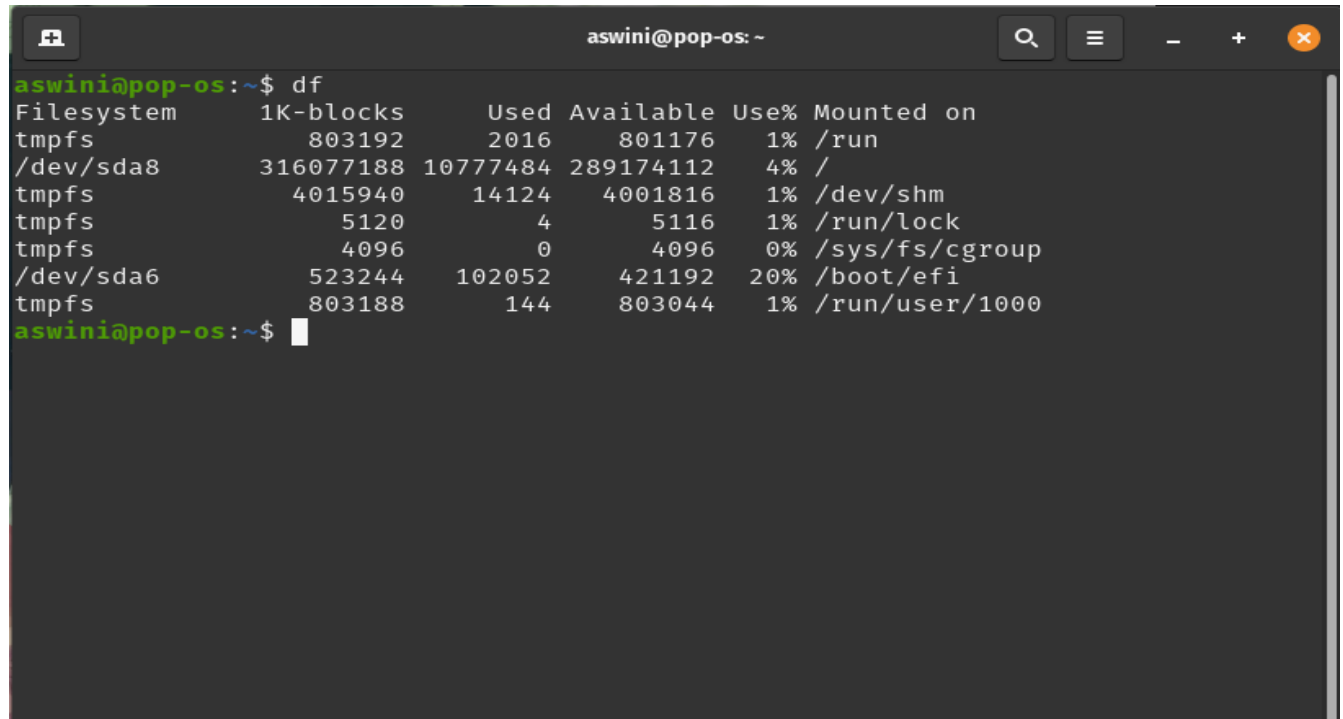


```
Activities Terminal Apr 20 4:02 AM aswini@pop-os -
aswini@pop-os:~$ cat /etc/passwd | cut -d: -f1
root
daemon
bin
sys
sync
games
man
lp
mail
news
uucp
proxy
www-data
backup
list
irc
gnats
nobody
systemd-timesync
systemd-network
systemd-resolve
messagebus
syslog
_apt
geoclue
colord
gnome-initial-setup
speech-dispatcher
gdm
avahi-autoipd
avahi
tss
pulse
rtkit
usbmux
_flatpak
cups-pk-helper
saned
dnsmasq
tcpdump
uuidd
nvidia-persistenced
systemd-coredump
aswini
aswini@pop-os:~$
```

Ques 6: What is the command to find remaining disk space in unix server ? Also find the method to see command line history ?

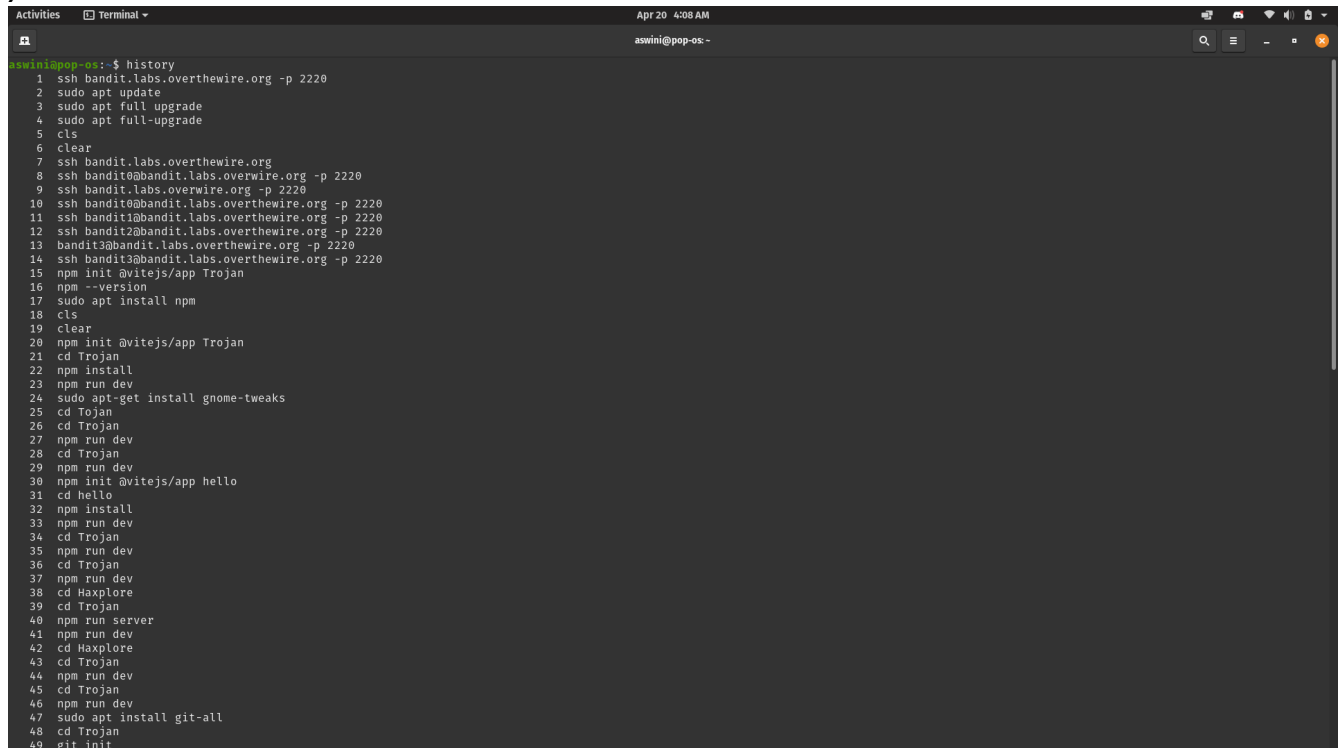
Ans:

(I)



```
aswini@pop-os: ~$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
tmpfs            803192         2016    801176   1% /run
/dev/sda8       316077188 10777484 289174112   4% /
tmpfs           4015940        14124    4001816   1% /dev/shm
tmpfs            5120           4         5116   1% /run/lock
tmpfs            4096           0         4096   0% /sys/fs/cgroup
/dev/sda6       523244        102052    421192  20% /boot/efi
tmpfs            803188         144    803044   1% /run/user/1000
aswini@pop-os: ~$
```

(II)



```
aswini@pop-os: ~$ history
1  ssh bandit.labs.overthewire.org -p 2220
2  sudo apt update
3  sudo apt full upgrade
4  sudo apt full-upgrade
5  cls
6  clear
7  ssh bandit.labs.overthewire.org
8  ssh bandit0@bandit.labs.overthewire.org -p 2220
9  ssh bandit.labs.overthewire.org -p 2220
10 ssh bandit0@bandit.labs.overthewire.org -p 2220
11 ssh bandit1@bandit.labs.overthewire.org -p 2220
12 ssh bandit2@bandit.labs.overthewire.org -p 2220
13 bandit3@bandit.labs.overthewire.org -p 2220
14 ssh bandit3@bandit.labs.overthewire.org -p 2220
15 npm init @vitejs/app Trojan
16 npm --version
17 sudo apt install npm
18 cls
19 clear
20 npm init @vitejs/app Trojan
21 cd Trojan
22 npm install
23 npm run dev
24 sudo apt-get install gnome-tweaks
25 cd Trojan
26 cd Trojan
27 npm run dev
28 cd Trojan
29 npm run dev
30 npm init @vitejs/app hello
31 cd hello
32 npm install
33 npm run dev
34 cd Trojan
35 npm run dev
36 cd Trojan
37 npm run dev
38 cd Haxplore
39 cd Trojan
40 npm run server
41 npm run dev
42 cd Haxplore
43 cd Trojan
44 npm run dev
45 cd Trojan
46 npm run dev
47 sudo apt install git-all
48 cd Trojan
49 git init
```

Ques 7: Write a command to copy one file into another ? Also find, how to concatenate the files.

Ans:

(I)

```
aswini@pop-os: ~  
aswini@pop-os:~$ cat file1.txt  
This is a command to copy one file into another  
and also how to concatenate  
the files  
aswini@pop-os:~$ touch file2.txt  
aswini@pop-os:~$ cat file2.txt  
aswini@pop-os:~$ cp file1.txt file2.txt  
aswini@pop-os:~$ cat file2.txt  
This is a command to copy one file into another  
and also how to concatenate  
the files  
aswini@pop-os:~$
```

(II)

```
aswini@pop-os: ~  
aswini@pop-os:~$ cat file1.txt  
This is a command to copy one file into another  
and also how to concatenate  
the files  
aswini@pop-os:~$ cat file2.txt  
This is a command to copy one file into another  
and also how to concatenate  
the files  
aswini@pop-os:~$ cat file1.txt >> file2.txt  
aswini@pop-os:~$ cat file2.txt  
This is a command to copy one file into another  
and also how to concatenate  
the files  
This is a command to copy one file into another  
and also how to concatenate  
the files  
aswini@pop-os:~$
```

Ques 8: What are the commands in the unix for file system commands, processes control command, and utilities programmes command ?

Ans:

File System Commands:

1. ls
2. cd
3. mv
4. popd
5. cp
6. cat
7. pushd
8. mkdir

Process Control Commands:

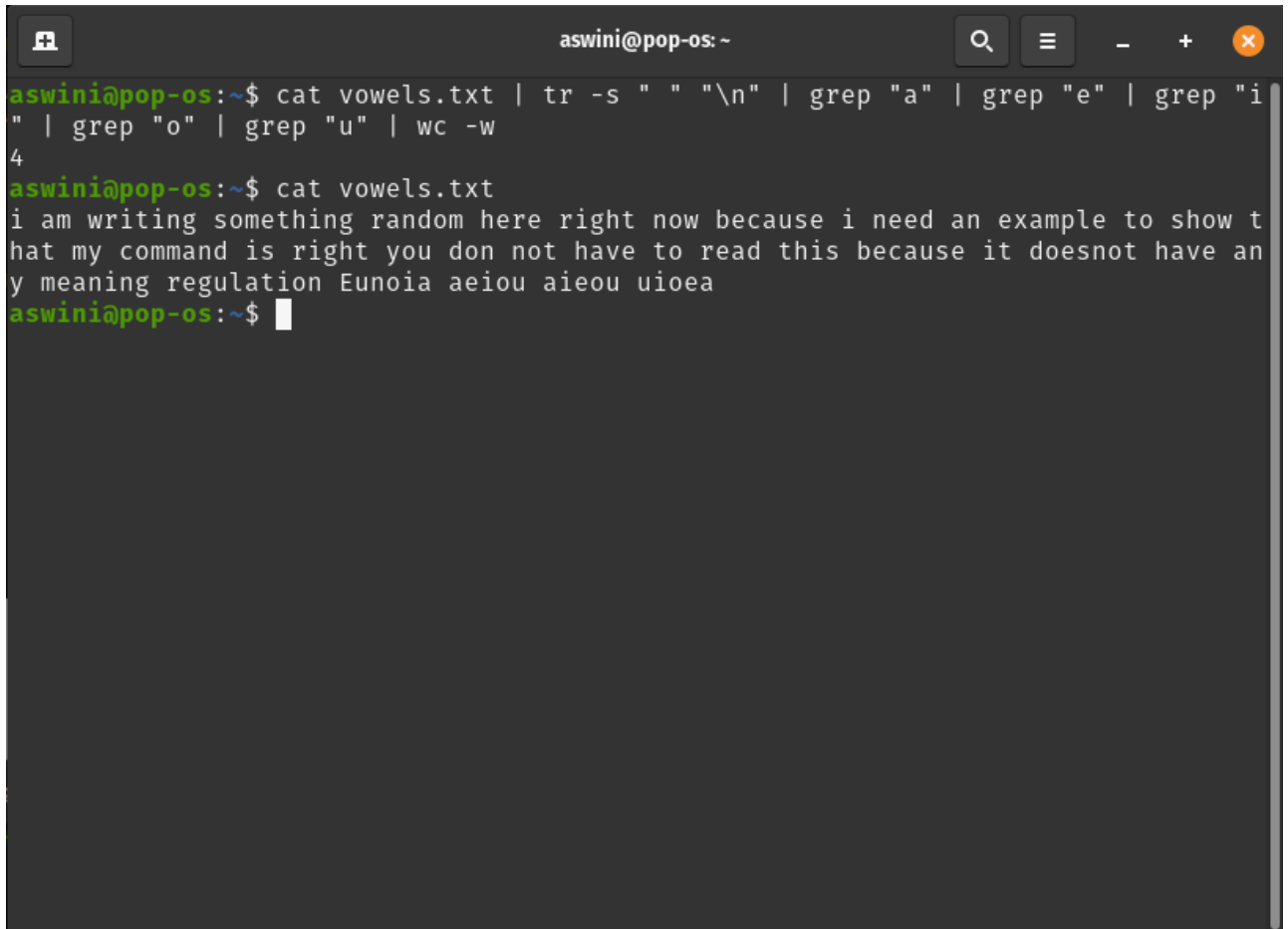
1. fg: bring process into foreground
2. jobs: list processes
3. bg: put suspended process into background

Utility Commands:

1. pwd
2. emacs
3. less
4. chmod

Ques 9: Count the number of words in the file which contain all the letters a, e, i, o, u. These letters may occur more than once & other letters are also permitted.

Ans:



```
aswini@pop-os: ~  
aswini@pop-os:~$ cat vowels.txt | tr -s " " "\n" | grep "a" | grep "e" | grep "i"  
" | grep "o" | grep "u" | wc -w  
4  
aswini@pop-os:~$ cat vowels.txt  
i am writing something random here right now because i need an example to show t  
hat my command is right you don not have to read this because it doesnot have an  
y meaning regulation Eunoia aeiou aieou uioea  
aswini@pop-os:~$
```

Ques 10: Write a command that will output the sorted contents of a file named IN.txt and place the output in another file named OUT.txt while at the same time excluding duplicate entries.

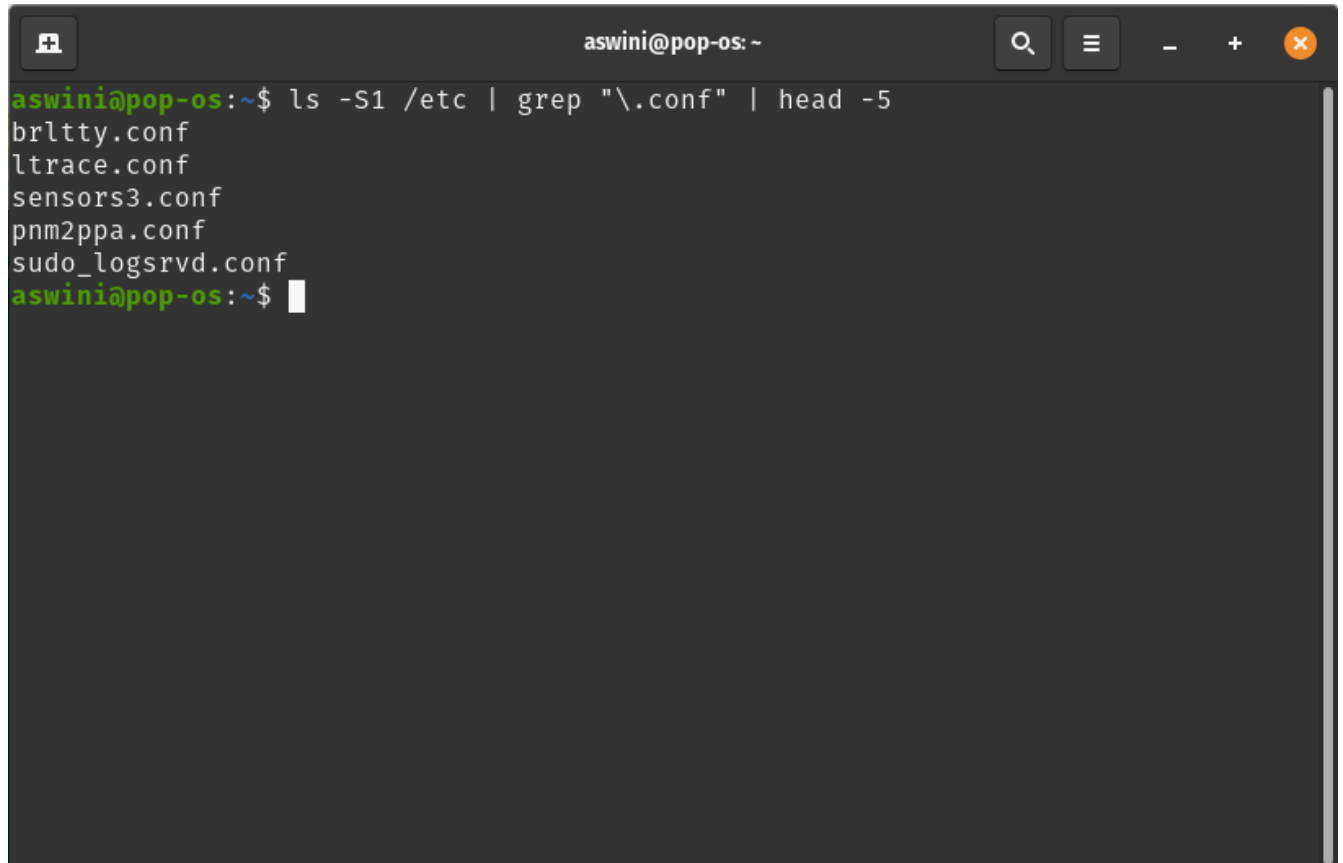
Ans:



```
aswini@pop-os: ~  
aswini@pop-os:~$ cat IN.txt  
I  
am  
am  
P  
Aswini  
Kumar  
aswini@pop-os:~$ touch OUT.txt  
aswini@pop-os:~$ cat OUT.txt  
aswini@pop-os:~$ sort IN.txt -u > OUT.txt  
aswini@pop-os:~$ cat OUT.txt  
am  
Aswini  
I  
Kumar  
P  
aswini@pop-os:~$
```

Ques 11: List 5 largest files in the /etc directory which contain the string '.conf', sorted by decreasing file size.

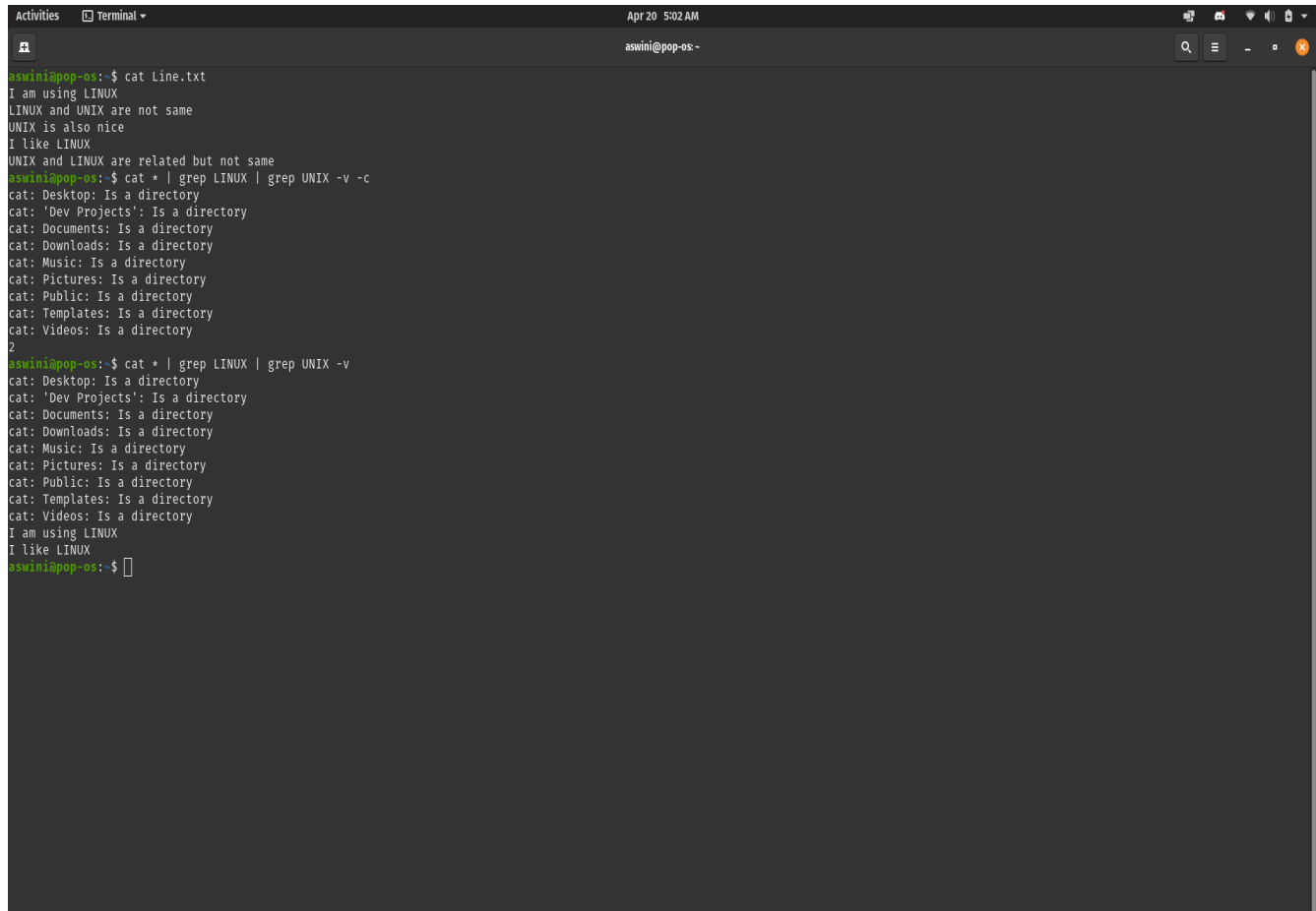
Ans:



```
aswini@pop-os: ~  
aswini@pop-os:~$ ls -Sl /etc | grep "\.conf" | head -5  
brltty.conf  
ltrace.conf  
sensors3.conf  
pnm2ppa.conf  
sudo_logsrvd.conf  
aswini@pop-os:~$
```

Ques 12: Write a command to search contents of all files in current directory and display the total number of lines that contain the string 'LINUX' but not 'UNIX'.

Ans:

A terminal window titled 'Terminal' with a dark background. The user 'aswini' is logged in on a system named 'pop-os'. The terminal shows the following sequence of commands and outputs:
1. Command: `cat Line.txt`
Output: `I am using LINUX
LINUX and UNIX are not same
UNIX is also nice
I like LINUX
UNIX and LINUX are related but not same`
2. Command: `cat * | grep LINUX | grep UNIX -v -c`
Output: `cat: Desktop: Is a directory
cat: 'Dev Projects': Is a directory
cat: Documents: Is a directory
cat: Downloads: Is a directory
cat: Music: Is a directory
cat: Pictures: Is a directory
cat: Public: Is a directory
cat: Templates: Is a directory
cat: Videos: Is a directory
2`
3. Command: `cat * | grep LINUX | grep UNIX -v`
Output: `cat: Desktop: Is a directory
cat: 'Dev Projects': Is a directory
cat: Documents: Is a directory
cat: Downloads: Is a directory
cat: Music: Is a directory
cat: Pictures: Is a directory
cat: Public: Is a directory
cat: Templates: Is a directory
cat: Videos: Is a directory
I am using LINUX
I like LINUX`
The terminal ends with the prompt `aswini@pop-os:~$`.

Ques 13: Write a command that will find all text files in a directory such that it does not contain the word "unix" in any form (that is, it must include the words Unix, UNIX, or uNix).


Ans:

```
aswini@pop-os: ~  
aswini@pop-os:~$ grep -iL "unix" *.txt  
answer.txt  
count.txt  
file1.txt  
file2.txt  
IN.txt  
list.txt  
OUT.txt  
processes.txt  
vowels.txt  
aswini@pop-os:~$ ls  
answer.txt  Documents  IN.txt      newlist     processes.txt  Templates  
count.txt   Downloads  Line.txt    OUT.txt     Public         unix.txt  
Desktop     file1.txt  list.txt    Pictures    sample2.txt    Videos  
'Dev Projects' file2.txt  Music      Portal      sample.txt     vowels.txt  
aswini@pop-os:~$ cat sample.txt  
random document to check Unix  
UNiX uNix unix  
aswini@pop-os:~$ cat sample2.txt  
hello UNIX  
hello LINUX  
hello UNIX  
aswini@pop-os:~$ cat vowels.txt  
i am writing something random here right now because i need an example to show t  
hat my command is right you don not have to read this because it doesnot have an  
y meaning regulation Eunoia aeiou aieou uioea  
aswini@pop-os:~$
```

Ques 14: How will you display Today's date in the format of dd/mm/yyyy ? In a file word UNIX is appearing many times. How you count the number ?

Ans:

(I)



```
aswini@pop-os: ~  
aswini@pop-os:~$ date +%d/%m/%Y  
20/04/2021  
aswini@pop-os:~$
```

(II)



```
aswini@pop-os:~$ cat unix.txt  
UNIX is good  
UNIX is nice  
I like UNIX  
UNIX is powerfull  
aswini@pop-os:~$ grep -o UNIX unix.txt | wc -l  
4  
aswini@pop-os:~$
```