

Lab 1 Task

Name: Muhammad Sherjeel Akhtar

Roll No: 20p-0101

Subject: Operating Systems Lab

Submitted To Respected Sir: Muhammad Ahsan

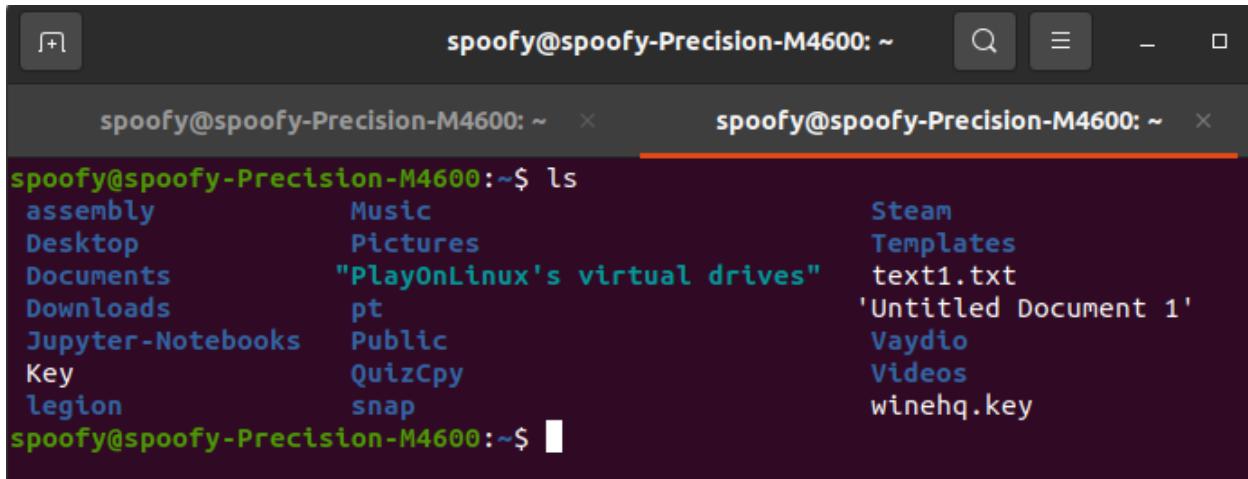
Section: BCS-4A

####786####

LS

Flags:

Simple ls:



```
spoofy@spoofy-Precision-M4600:~$ ls
assembly          Music           Steam
Desktop           Pictures        Templates
Documents         "PlayOnLinux's virtual drives"
Downloads         pt              text1.txt
Jupyter-Notebooks Public          'Untitled Document 1'
Key               QuizCpy        Vaydio
legion            snap            Videos
spoofy@spoofy-Precision-M4600:~$
```

ls -lh:

```
spoofy@spoofy-Precision-M4600:~$ ls -lh
total 96K
drwxrwxr-x  4 spoofy spoofy 4.0K 2022 25   جن   assembly
drwxr-xr-x  4 spoofy spoofy 4.0K 13:24 30   جنوی Desktop
drwxr-xr-x  4 spoofy spoofy 4.0K 00:16 27   جنوی Documents
drwxr-xr-x 25 spoofy spoofy 4.0K 15:45 31   جنوی Downloads
drwxrwxr-x  4 spoofy spoofy 4.0K 23:52 28   جنوی Jupyter-Notebooks
-rw-rw-r--  1 spoofy spoofy 0 15:43 3   نوہ بر Key
drwxrwxr-x 21 spoofy spoofy 4.0K 08:19 19   سسہ بر legion
drwxr-xr-x  2 spoofy spoofy 4.0K 2022 15   مفی Music
drwxr-xr-x  2 spoofy spoofy 20K 23:59 26   جنوی Pictures
lrwxrwxrwx  1 spoofy spoofy 38 2022 18   مفی "PlayOnLinux's virtual drives" -> /home/spoofy/.PlayOnLinux//wineprefix/
drwxrwxr-x  6 spoofy spoofy 4.0K 12:13 12   سسہ بر pt
drwxr-xr-x  2 spoofy spoofy 4.0K 2022 15   مفی Public
drwxrwxr-x  2 spoofy spoofy 4.0K 15:04 1   سسہ بر QuizCpy
drwx----- 14 spoofy spoofy 4.0K 22:03 21   سسہ بر snap
drwxrwxr-x  3 spoofy spoofy 4.0K 2022 18   مفی Steam
drwxr-xr-x  2 spoofy spoofy 4.0K 2022 15   مفی Templates
-rw-rw-r--  1 spoofy spoofy 22 14:53 29   اکٹ text1.txt
-rw-rw-r--  1 spoofy spoofy 1.3K 23:44 19   اکتوبر 'Untitled Document 1'
drwxrwxr-x  2 spoofy spoofy 4.0K 2022 30   مفی Vaydio
drwxr-xr-x  2 spoofy spoofy 4.0K 16:20 15   سسہ بر Videos
-rw-rw-r--  1 spoofy spoofy 3.2K 2018 19   سسہ بر winehq.key
spoofy@spoofy-Precision-M4600:~$
```

ls -a:

```

spoofy@spoofy-Precision-M4600:~ $ ls -a
.s bashrc desktop .ipython .local .p2 .profile .rest-client .steamid .launcher .vmlininfo
.. cert Downloads .java .minecraft .mongodr .Pictures .Public .ssh .sudo_as_admin_successful .steamclient .wcookie
.8bitMMO .config .eclipse .jupyter .mongod .pulse-cookie .Steam .Templates .Vavdio .wget-hsts
assembly .hashcat Key Mozilla .pkl .playOnLinux .python_history .Texti.txt .Version.swp .wine
.bash_history Desktop .hashcat Key Mozilla .pkl .playOnLinux .python_history .Steam .Texti.txt .Version.swp .winehq.key
.bash_logout Documents .ipython_checkpoints Legion .npm "PlayOnLinux's virtual drives" QuizCopy .Steampath .Thunderbird .Videos
.bash_logout Documents .ipython_checkpoints Legion .npm "PlayOnLinux's virtual drives" QuizCopy .Steampath .Thunderbird .Videos
spoofy@spoofy-Precision-M4600:~ $

```

ls -f:

```

spoofy@spoofy-Precision-M4600:~ $ ls -f
lib32 dev var mnt sys .. swapfile tmp libx32 media home bin sbin lost+found proc run cdrom opt lib64 .
boot usr snap lib srv etc root
spoofy@spoofy-Precision-M4600:~ $

```

ls -g:

```

spoofy@spoofy-Precision-M4600:~ $ ls -g
total 96
drwxrwxr-x 4 spoofy 4096 2022 25   جن  assembly
drwxr-xr-x 4 spoofy 4096 13:24 30   جنوبي  Desktop
drwxr-xr-x 4 spoofy 4096 00:16 27   جنوبي  Documents
drwxr-xr-x 25 spoofy 4096 15:45 31   جنوبي  Downloads
drwxrwxr-x 4 spoofy 4096 23:52 28   جنوبي  Jupyter-Notebooks
-rw-rw-r-- 1 spoofy 0 15:43 3   نومبر  Key
drwxrwxr-x 21 spoofy 4096 08:19 19   سمبر  legion
drwxr-xr-x 2 spoofy 4096 2022 15   مف  Music
drwxr-xr-x 2 spoofy 20480 23:59 26   جنوبي  Pictures
lrwxrwxrwx 1 spoofy 38 2022 18   مف  "PlayOnLinux's virtual drives" -> /home/spoofy/.PlayOnLinux//wineprefix/
drwxrwxr-x 6 spoofy 4096 12:13 12   سمبر  pt
drwxr-xr-x 2 spoofy 4096 2022 15   مف  Public
drwxrwxr-x 2 spoofy 4096 15:04 1   سمبر  QuizCopy
drwx----- 14 spoofy 4096 22:03 21   سمبر  snap
drwxrwxr-x 3 spoofy 4096 2022 18   مف  Steam
drwxr-xr-x 2 spoofy 4096 2022 15   مف  Templates
-rw-rw-r-- 1 spoofy 22 14:53 29   اكتوبر  text1.txt
-rw-rw-r-- 1 spoofy 1237 23:44 19   اكتوبر  'Untitled Document 1'
drwxrwxr-x 2 spoofy 4096 2022 30   مف  Vavdio
drwxr-xr-x 2 spoofy 4096 16:20 15   سمبر  Videos
-rw-rw-r-- 1 spoofy 3220 2018 19   سمبر  winehq.key
spoofy@spoofy-Precision-M4600:~ $

```

MAN:

“man pwd”

The screenshot shows three terminal windows side-by-side. The left window is titled 'spoofy@spoofy-Precision-M4600: ~'. It displays the man page for the 'pwd' command, which is part of the coreutils package. The man page includes sections for NAME, SYNOPSIS, DESCRIPTION, AUTHOR, REPORTING BUGS, COPYRIGHT, SEE ALSO, and a note about GNU coreutils 8.30. The middle window is titled 'User Commands' and shows the command 'pwd'. The right window is also titled 'spoofy@spoofy-Precision-M4600: ~' and shows the command 'PWD(1)'.

```
PWD(1)
NAME
    pwd - print name of current/working directory
SYNOPSIS
    pwd [OPTION]...
DESCRIPTION
    Print the full filename of the current working directory.
    -L, --logical
        Use PWD from environment, even if it contains symlinks
    -P, --physical
        avoid all symlinks
    --help display this help and exit
    --version
        output version information and exit
    If no option is specified, -P is assumed.
    NOTE: your shell may have its own version of pwd, which usually supersedes the version described here. Please refer to your shell's documentation for details about the options it supports.
AUTHOR
    Written by Jim Meyering.
REPORTING BUGS
    GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
    Report pwd translation bugs to <https://translationproject.org/team/>
COPYRIGHT
    Copyright © 2018 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
    This is free software: you are free to change and redistribute it. There is NO WARRANTY, to the extent permitted by law.
SEE ALSO
    getcwd(3)
    Full documentation at: <https://www.gnu.org/software/coreutils/pwd>
    or available locally via: info '(coreutils) pwd invocation'
GNU coreutils 8.30
Manual page pwd(1) line 1/44 (END) (press h for help or q to quit).
September 2019
PWD(1)
```

cd:

The screenshot shows a single terminal window with the title 'spoofy@spoofy-Precision-M4600: ~/Downloads'. The user has run the command 'cd Downloads' followed by 'pwd' to verify the current directory. The output shows the path '/home/spoofy/Downloads'.

```
spoofy@spoofy-Precision-M4600:~$ cd Downloads
spoofy@spoofy-Precision-M4600:~/Downloads$ pwd
/home/spoofy/Downloads
spoofy@spoofy-Precision-M4600:~/Downloads$
```

less:

The screenshot shows a single terminal window with the title 'spoofy@spoofy-Precision-M4600: ~/Downloads'. The user has run the command 'less hello.txt' to view the contents of a file. The file appears to be empty or contains very little text.

```
spoofy@spoofy-Precision-M4600:~$ less hello.txt
```

```
spooky@spooky-Precision-M4600: ~/Downloads ×  
  
Hello World!  
hello.txt (END)
```

uname:

```
spooky@spooky-Precision-M4600: ~/Downloads ×  
  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname  
Linux  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -a:

```
spooky@spooky-Precision-M4600: ~/Downloads × spoonyp@spooky-Precision-M4600: ~  
  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -a  
Linux spooky-Precision-M4600 5.15.0-58-generic #64~20.04.1-Ubuntu SMP Fri Jan 6 16:42:31 UTC 2023 x86_64 x86_64 x86_64 GNU/Linux  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -s:

```
spooky@spooky-Precision-M4600: ~/Downloads ×  
  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -s  
Linux  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -n:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -n  
spooky-Precision-M4600  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -r:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -r  
5.15.0-58-generic  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -v:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -v  
#64~20.04.1-Ubuntu SMP Fri Jan 6 16:42:31 UTC 2023  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -m:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -m  
x86_64  
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ █
```

uname -p:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -p  
x86_64
```

uname -i:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ uname -i  
x86_64
```

uname -o:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ uname -o
GNU/Linux
```

uname -v:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ uname -v
#64~20.04.1-Ubuntu SMP Fri Jan 6 16:42:31 UTC 2023
```

uname - -help:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ uname -help
uname: invalid option -- 'h'
Try 'uname --help' for more information.
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ uname --help
Usage: uname [OPTION]...
Print certain system information. With no OPTION, same as -s.

-a, --all           print all information, in the following order,
                   except omit -p and -i if unknown:
-s, --kernel-name  print the kernel name
-n, --nodename     print the network node hostname
-r, --kernel-release print the kernel release
-v, --kernel-version print the kernel version
-m, --machine      print the machine hardware name
-p, --processor    print the processor type (non-portable)
-i, --hardware-platform print the hardware platform (non-portable)
-o, --operating-system print the operating system
--help            display this help and exit
--version         output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation at: <https://www.gnu.org/software/coreutils/uname>
or available locally via: info '(coreutils) uname invocation'
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

hostname:

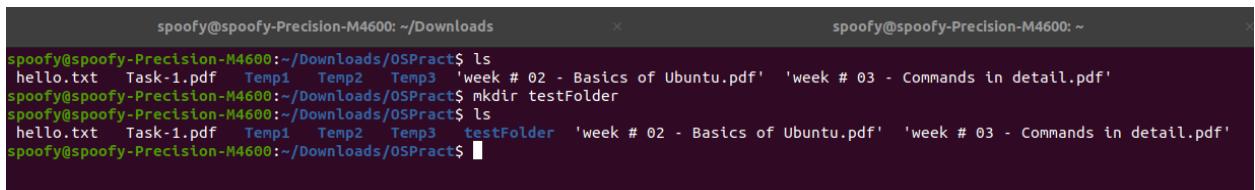
```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ hostname
spoofy-Precision-M4600
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

cd /, ls, cd .. , cd ../../ :



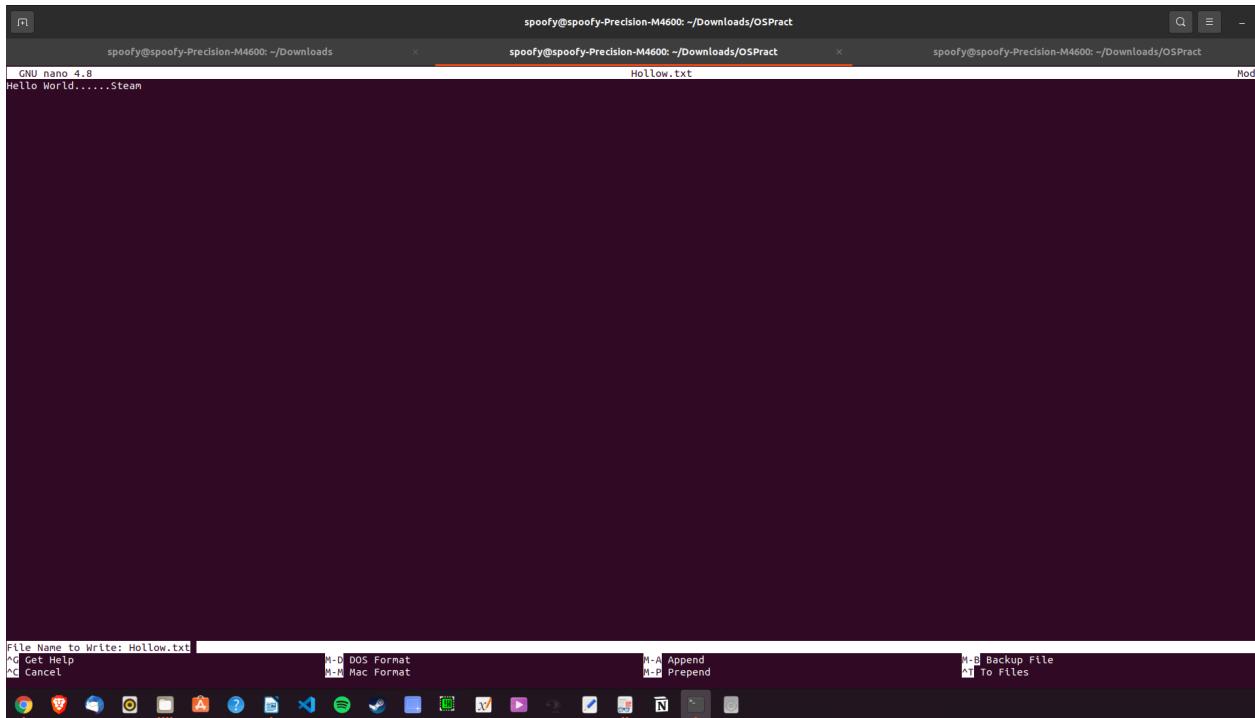
```
spooky@spooky-Precision-M4600:~/Downloads
spooky@spooky-Precision-M4600:~$ cd /
spooky@spooky-Precision-M4600:~$ cd ~/Downloads
spooky@spooky-Precision-M4600:~/Downloads$ cd ..
spooky@spooky-Precision-M4600:~$ ls
assembly Documents Jupyter-Notebooks legion Pictures pt QuizCopy Steam text1.txt Vaydio winehq.key
Desktop Downloads Key Music "PlayOnLinux's virtual drives" Public snap Templates 'Untitled Document 1' Videos
spooky@spooky-Precision-M4600:~$ cd
spooky@spooky-Precision-M4600:~$ ls
assembly Documents Jupyter-Notebooks legion Pictures pt QuizCopy Steam text1.txt Vaydio winehq.key
Desktop Downloads Key Music "PlayOnLinux's virtual drives" Public snap Templates 'Untitled Document 1' Videos
spooky@spooky-Precision-M4600:~$ cd ../..
spooky@spooky-Precision-M4600:~$ ls
bin boot cdrom dev etc home lib lib32 lib64 lost+found media mnt opt proc root run sbin snap srv swapfile sys tmp usr var
spooky@spooky-Precision-M4600:~$
```

mkdir:



```
spooky@spooky-Precision-M4600:~/Downloads
spooky@spooky-Precision-M4600:~/Downloads$ ls
hello.txt Task-1.pdf Temp1 Temp2 Temp3 'week # 02 - Basics of Ubuntu.pdf' 'week # 03 - Commands in detail.pdf'
spooky@spooky-Precision-M4600:~/Downloads$ mkdir testFolder
spooky@spooky-Precision-M4600:~/Downloads$ ls
hello.txt Task-1.pdf Temp1 Temp2 Temp3 testFolder 'week # 02 - Basics of Ubuntu.pdf' 'week # 03 - Commands in detail.pdf'
spooky@spooky-Precision-M4600:~/Downloads$
```

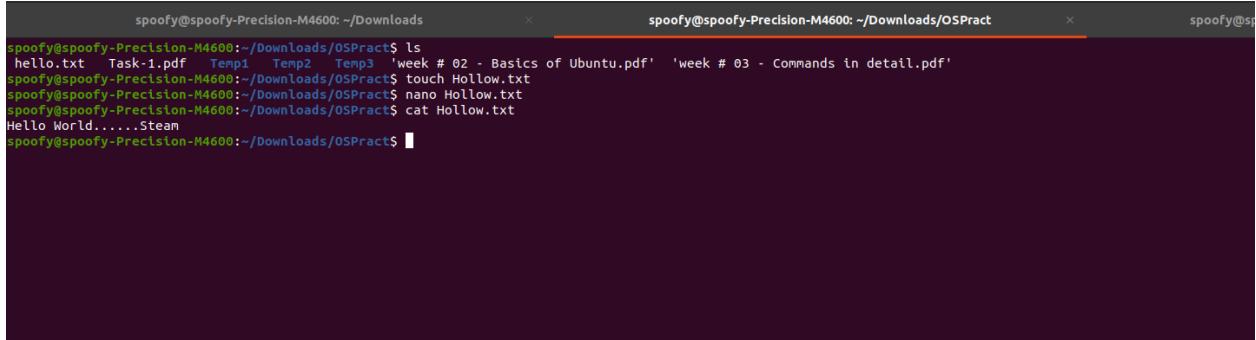
nano:



```
spooky@spooky-Precision-M4600:~/Downloads
spooky@spooky-Precision-M4600:~/Downloads$ nano Hollow.txt
GNU nano 4.8
Hello World.....Steam

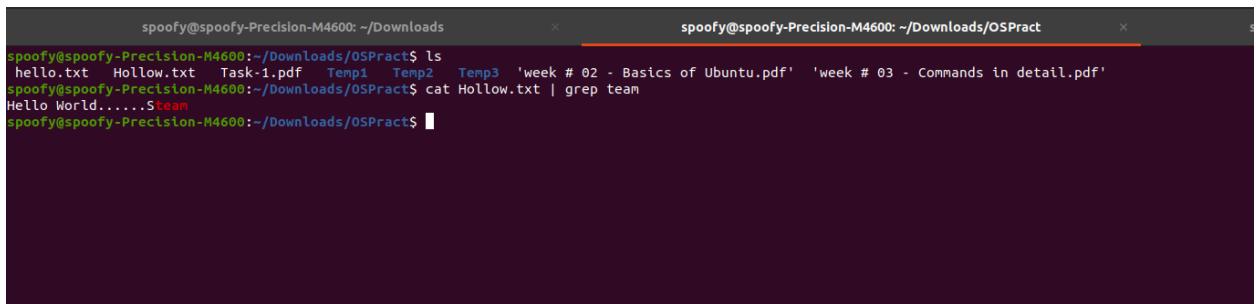
File Name to Write: Hollow.txt
M-D DOS Format
M-N Mac Format
M-A Append
M-B Backup File
M-T To Files
```

cat:



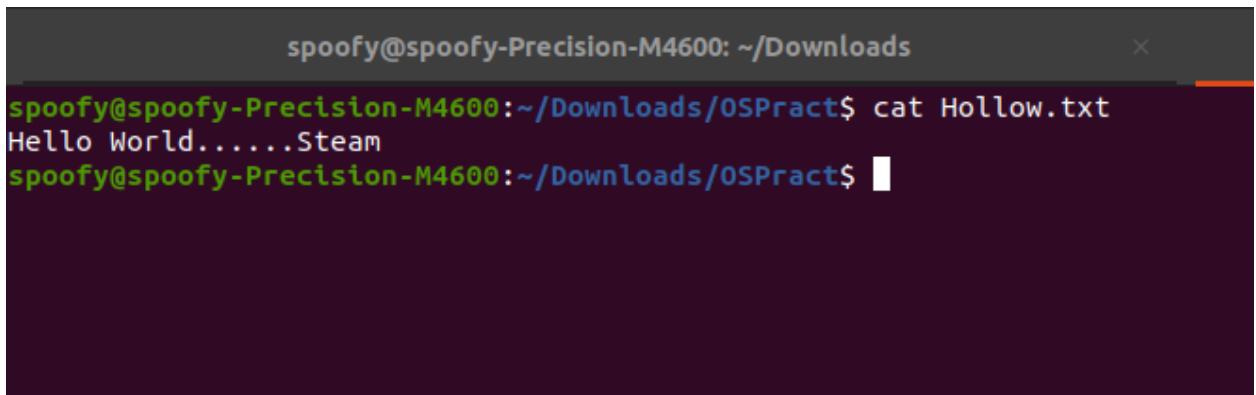
```
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$ ls
hello.txt  Task-1.pdf  Temp1  Temp2  Temp3  'week # 02 - Basics of Ubuntu.pdf'  'week # 03 - Commands in detail.pdf'
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ touch Hollow.txt
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ nano Hollow.txt
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ cat Hollow.txt
Hello World.....Steam
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

cat + grep:



```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ls
hello.txt  Hollow.txt  Task-1.pdf  Temp1  Temp2  Temp3  'week # 02 - Basics of Ubuntu.pdf'  'week # 03 - Commands in detail.pdf'
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ cat Hollow.txt | grep team
Hello World.....Steam
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

cat:



```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ cat Hollow.txt
Hello World.....Steam
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

sort:

The image shows two terminal windows side-by-side. The left window has the title 'spoofy@spoofy-Precision-M4600: ~/Downloads' and contains the command 'ls' followed by a list of files: hello.txt, Hollow.txt, Task-1.pdf, Temp1, Temp2, Temp3, 'week # 02 - Basics of Ubuntu.pdf', and 'week # 03 - Commands in detail.pdf'. The right window has the title 'spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract' and contains the command 'sort -b Hollow.txt' followed by the sorted output: Hello World.....Steam.

```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$ ls
hello.txt  Hollow.txt  Task-1.pdf  Temp1  Temp2  Temp3  'week # 02 - Basics of Ubuntu.pdf'  'week # 03 - Commands in detail.pdf'
Hello World.....Steam
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$ sort -b Hollow.txt
```

sort -n:

The image shows a single terminal window with the title 'spoofy@spoofy-Precision-M4600: ~/Downloads'. It displays the command 'sort -n Hollow.txt' followed by the sorted output: ABCXYZ, FIN, Hello World.....Steam. Below this, the command 'cat Hollow.txt' is run, showing the original unsorted content: Hello World.....Steam, ABCXYZ, FIN.

```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$ sort -n Hollow.txt
ABCXYZ
FIN
Hello World.....Steam
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$ cat Hollow.txt
Hello World.....Steam
ABCXYZ
FIN
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$
```

touch, tail, head:

```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ touch testified.txt
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ifconfig > testified.txt
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ head testified.txt
docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
        inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255
              ether 02:42:8a:6a:45:5c txqueuelen 0 (Ethernet)
                    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

eno1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
      ether d0:67:e5:49:01:f3 txqueuelen 1000 (Ethernet)
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ tail testified.txt
wlp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 172.20.3.183 netmask 255.255.0.0 broadcast 172.20.255.255
        inet6 fe80::f38:5fe1:ea7f:bb03 prefixlen 64 scopeid 0x20<link>
              ether 9c:b7:0d:91:35:03 txqueuelen 1000 (Ethernet)
                    RX packets 1100038 bytes 1309222565 (1.3 GB)
                    RX errors 0 dropped 0 overruns 0 frame 2537081
                    TX packets 426373 bytes 38694363 (38.6 MB)
                    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
                    device interrupt 17

spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

stat:

```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ stat Hollow.txt
  File: Hollow.txt
  Size: 34          Blocks: 8          IO Block: 4096   regular file
Device: 805h/2053d  Inode: 6326455    Links: 1
Access: (0664/-rw-rw-r--)  Uid: ( 1000/  spoofy)  Gid: ( 1000/  spoofy)
Access: 2023-01-31 16:44:47.725711830 +0500
Modify: 2023-01-31 16:44:42.069553873 +0500
Change: 2023-01-31 16:44:42.069553873 +0500
 Birth: -
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

free byte, free KB, free MB, free GB:

```
spoofy@spoofy-Precision-M4600: ~/Downloads × sp
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ free byte
      total        used        free      shared  buff/cache   available
Mem:    8016156     1845684     4138752      508368     2031720     5385720
Swap:  2097148      15968    2081180
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ free KB
      total        used        free      shared  buff/cache   available
Mem:    8016156     1841156     4140256      511336     2034744     5387280
Swap:  2097148      15968    2081180
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ free MB
      total        used        free      shared  buff/cache   available
Mem:    8016156     1838896     4143380      510464     2033880     5390412
Swap:  2097148      15968    2081180
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ free GB
      total        used        free      shared  buff/cache   available
Mem:    8016156     1809372     4173872      509488     2032912     5420912
Swap:  2097148      15968    2081180
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

uptime:

```
spoofy@spoofy-Precision-M4600: ~/Downloads

spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ uptime
 16:49:05 up 22:47,  1 user,  load average: 0.39, 0.38, 0.39
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

TOP:

```

spooky@spooky-Precision-M4600: ~/Downloads          spooky@spooky-Precision-M4600: ~/Downloads/OSPract
top - 16:49:36 up 22:48,  1 user,  load average: 0.37, 0.37, 0.39
Tasks: 291 total,   2 running, 288 sleeping,   1 stopped,   0 zombie
%Cpu(s):  1.8 us,  0.5 sy,  0.0 ni, 97.7 id,  0.0 wa,  0.0 hi,  0.0 si,  0.0 st
MiB Mem : 7828.3 total, 4037.4 free, 1803.2 used, 1987.7 buff/cache
MiB Swap: 2048.0 total, 2032.4 free,   15.6 used. 5255.8 avail Mem

PID USER      PR  NI    VIRT    RES    SHR S %CPU %MEM TIME+ COMMAND
13116 spooky   20   0 4412888 274116 72240 R 12.0  3.4  8:02.09 gnome-shell
12962 spooky   20   0 444412 83180 49956 S  4.0  1.0  4:48.48 Xorg
1696 root     20   0 2121976 34080 6572 S  1.0  0.4  0:07.74 dockerd
1698 mongodb  20   0 2610888 88232 20780 S  0.7  1.1  3:07.25 mongod
25947 spooky   20   0 16.5g 274764 156580 S  0.7  3.4  1:22.02 chrome
11547 root     0 -20   0   0   0 I  0.3  0.0  0:11.39 kworker/u33:2-l915_flip
13090 spooky   20   0 7380  4060 3608 S  0.3  0.1  0:00.44 dbus-daemon
13992 spooky   20   0 831252 61232 36140 S  0.3  0.8  1:01.30 gnome-terminal-
29522 root     20   0   0   0 I  0.3  0.0  0:03.46 kworker/0:2-events
32086 root     20   0   0   0 I  0.3  0.0  0:00.98 kworker/13:events
32642 root     20   0   0   0 I  0.3  0.0  0:00.41 kworker/6:0-events
32785 spooky   20   0 12344  4180 3360 R  0.3  0.1  0:00.06 top
 1 root     20   0 169436 12392 7272 S  0.0  0.2  0:05.66 systemd
 2 root     20   0   0   0 S  0.0  0.0  0:00.03 kthreadd
 3 root     0 -20   0   0 I  0.0  0.0  0:00.00 rcu_gp
 4 root     0 -20   0   0 I  0.0  0.0  0:00.00 rcu_par_gp
 5 root     0 -20   0   0 I  0.0  0.0  0:00.00 slub_flushwq
 6 root     0 -20   0   0 I  0.0  0.0  0:00.00 netns
 8 root     0 -20   0   0 I  0.0  0.0  0:00.00 kworker/0:0H-events_highpri
10 root     0 -20   0   0 I  0.0  0.0  0:00.00 mm_percpu_wq
11 root     20   0   0   0 S  0.0  0.0  0:00.00 rcu_tasks_rude_
12 root     20   0   0   0 S  0.0  0.0  0:00.00 rcu_tasks_trace
13 root     20   0   0   0 S  0.0  0.0  0:01.73 ksoftirqd/0
14 root     20   0   0   0 I  0.0  0.0  0:25.63 rCU_sched
15 root     rt   0   0   0 S  0.0  0.0  0:00.25 migration/0
16 root     -51   0   0   0 S  0.0  0.0  0:00.00 idle_inject/0
18 root     20   0   0   0 S  0.0  0.0  0:00.00 cpuhp/0
19 root     20   0   0   0 S  0.0  0.0  0:00.01 cpuhp/1
20 root     -51   0   0   0 S  0.0  0.0  0:00.00 idle_inject/1
21 root     rt   0   0   0 S  0.0  0.0  0:00.40 migration/1
22 root     20   0   0   0 S  0.0  0.0  0:00.79 ksoftirqd/1
24 root     0 -20   0   0 O  I  0.0  0.0  0:00.00 kworker/1:0H-events_highpri
25 root     20   0   0   0 S  0.0  0.0  0:00.01 cpuhp/2
26 root     -51   0   0   0 S  0.0  0.0  0:00.00 idle_inject/2
27 root     rt   0   0   0 S  0.0  0.0  0:00.37 migration/2
28 root     20   0   0   0 S  0.0  0.0  0:00.47 ksoftirqd/2
30 root     0 -20   0   0 O  I  0.0  0.0  0:00.00 kworker/2:0H-events_highpri
31 root     20   0   0   0 S  0.0  0.0  0:00.01 cpuhp/3
32 root     -51   0   0   0 S  0.0  0.0  0:00.00 idle_inject/3
33 root     rt   0   0   0 S  0.0  0.0  0:00.35 migration/3
34 root     20   0   0   0 S  0.0  0.0  0:00.38 ksoftirqd/3
36 root     0 -20   0   0 O  I  0.0  0.0  0:00.00 kworker/3:0H-events_highpri
37 root     20   0   0   0 S  0.0  0.0  0:00.01 cpuhp/4

```

ifconfig:

```
spoofy@spoofy-Precision-M4600: ~/Downloads
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ifconfig
docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
        inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255
              ether 02:42:8a:6a:45:5c txqueuelen 0 (Ethernet)
                    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

eno1: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
        ether d0:67:e5:49:01:f3 txqueuelen 1000 (Ethernet)
              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
              device interrupt 20 memory 0xe3d00000-e3d20000

ipv6leakinrnf0: flags=195<UP,BROADCAST,RUNNING,NOARP> mtu 1500
        inet6 fdeb:446c:912d:8da:: prefixlen 64 scopeid 0x0<global>
        inet6 fe80::cd2f:2fff:9c67:d670 prefixlen 64 scopeid 0x20<link>
              ether 16:85:db:62:11:e5 txqueuelen 1000 (Ethernet)
                    RX packets 0 bytes 0 (0.0 B)
                    RX errors 0 dropped 0 overruns 0 frame 0
                    TX packets 12530 bytes 1394743 (1.3 MB)
                    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 3955462 bytes 253048023 (253.0 MB)
                    RX errors 0 dropped 0 overruns 0 frame 0
                    TX packets 3955462 bytes 253048023 (253.0 MB)
                    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wlp2s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
        inet 172.20.3.183 netmask 255.255.0.0 broadcast 172.20.255.255
        inet6 fe80::f38:5fe1:ea7f:bb03 prefixlen 64 scopeid 0x20<link>
              ether 9c:b7:0d:91:35:03 txqueuelen 1000 (Ethernet)
                    RX packets 1100287 bytes 1309261535 (1.3 GB)
                    RX errors 0 dropped 0 overruns 0 frame 2546982
                    TX packets 426379 bytes 38695719 (38.6 MB)
                    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
              device interrupt 17

spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

gzip, gunzip:

Activities Terminal جنوری 31 مس 4:51

spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract

```
spoofy@spoofy-Precision-M4600:~/Downloads$ ls
hello.txt Hollow.txt Task-1.pdf Temp1 Temp2 Temp3 testified.txt 'week # 02 - Basics of Ubuntu.pdf' 'week # 03 - Commands in detail.pdf'
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ gzip Temp1
gzip: Temp1 is a directory -- ignored
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ gzip testified.txt
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ls
hello.txt Hollow.txt Task-1.pdf Temp1 Temp2 Temp3 testified.txt.gz 'week # 02 - Basics of Ubuntu.pdf' 'week # 03 - Commands in detail.pdf'
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ gunzip testified.txt
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ls
hello.txt Hollow.txt Task-1.pdf Temp1 Temp2 Temp3 testified.txt 'week # 02 - Basics of Ubuntu.pdf' 'week # 03 - Commands in detail.pdf'
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

ps:

spoofy@spoofy-Precision-M4600: ~/Downloads

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps
 PID TTY          TIME CMD
 29300 pts/0    00:00:00 bash
 32104 pts/0    00:00:00 sl
 32935 pts/0    00:00:00 ps
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$
```

ps -e:

The screenshot shows a Linux desktop environment with two terminal windows open. The left terminal window has the title 'spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract' and displays the command 'ps -ef'. The right terminal window also has the same title and displays the command 'spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract'. Both terminals show a list of processes with columns for PID, TTY, TIME, and CMD. The taskbar at the bottom contains icons for various applications including a browser, file manager, terminal, and system tools.

```
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract$ ps -ef
PID TTY      TIME CMD
 1 ?        00:00:05 systemd
 2 ?        00:00:00 kthreadd
 3 ?        00:00:00 rcu_gp
 4 ?        00:00:00 rcu_par_gp
 5 ?        00:00:00 slub_flushwq
 6 ?        00:00:00 netns
 8 ?        00:00:00 kworker/0:0H-events_highpri
10 ?       00:00:00 mm_percpu_wq
11 ?       00:00:00 rcu_tasks_rude_
12 ?       00:00:00 rcu_tasks_trace
13 ?       00:00:01 ksoftirqd/0
14 ?       00:00:25 rcu_sched
15 ?       00:00:00 migration/0
16 ?       00:00:00 idle_inject/0
18 ?       00:00:00 cpuhp/0
19 ?       00:00:00 cpuhp/1
20 ?       00:00:00 idle_inject/1
21 ?       00:00:00 migration/1
22 ?       00:00:00 ksoftirqd/1
24 ?       00:00:00 kworker/1:0H-events_highpri
25 ?       00:00:00 cpuhp/2
26 ?       00:00:00 idle_inject/2
27 ?       00:00:00 migration/2
28 ?       00:00:00 ksoftirqd/2
30 ?       00:00:00 kworker/2:0H-events_highpri
31 ?       00:00:00 cpuhp/3
32 ?       00:00:00 idle_inject/3
33 ?       00:00:00 migration/3
34 ?       00:00:00 ksoftirqd/3
36 ?       00:00:00 kworker/3:0H-events_highpri
37 ?       00:00:00 cpuhp/4
38 ?       00:00:00 idle_inject/4
39 ?       00:00:00 migration/4
40 ?       00:00:00 ksoftirqd/4
42 ?       00:00:00 kworker/4:0H-events_highpri
43 ?       00:00:00 cpuhp/5
44 ?       00:00:00 idle_inject/5
45 ?       00:00:00 migration/5
46 ?       00:00:00 ksoftirqd/5
48 ?       00:00:00 kworker/5:0H-events_highpri
49 ?       00:00:00 cpuhp/6
50 ?       00:00:00 idle_inject/6
51 ?       00:00:00 migration/6
52 ?       00:00:00 ksoftirqd/6
54 ?       00:00:00 kworker/6:0H-events_highpri
55 ?       00:00:00 cpuhp/7
56 ?       00:00:00 idle_inject/7
57 ?       00:00:00 migration/7
58 ?       00:00:03 ksoftirqd/7
```

ps -ef:

```
spoofy@spoofy-Precision-M4600: ~/Downloads $ ps -ef
UID      PID  PPID  C STIME TTY      TIME CMD
root      1      0  0 00:00:05 ? 30.نوری /sbin/init splash
root      2      0  0 00:00:00 ? 30.نوری [kthreadd]
root      3      2  0 00:00:00 ? 30.نوری [rcu_gp]
root      4      2  0 00:00:00 ? 30.نوری [rcu_par_gp]
root      5      2  0 00:00:00 ? 30.نوری [slub_flushwq]
root      6      2  0 00:00:00 ? 30.نوری [netns]
root      8      2  0 00:00:00 ? 30.نوری [kworker/0:0H-events_highpri]
root     10      2  0 00:00:00 ? 30.نوری [mm_percpu_wq]
root     11      2  0 00:00:00 ? 30.نوری [rcu_tasks_rude_]
root     12      2  0 00:00:00 ? 30.نوری [rcu_tasks_trace]
root     13      2  0 00:00:01 ? 30.نوری [ksoftirqd/0]
root     14      2  0 00:00:25 ? 30.نوری [rcu_sched]
root     15      2  0 00:00:00 ? 30.نوری [migration/0]
root     16      2  0 00:00:00 ? 30.نوری [idle_inject/0]
root     18      2  0 00:00:00 ? 30.نوری [cpuhp/0]
root     19      2  0 00:00:00 ? 30.نوری [cpuhp/1]
root     20      2  0 00:00:00 ? 30.نوری [idle_inject/1]
root     21      2  0 00:00:00 ? 30.نوری [migration/1]
root     22      2  0 00:00:00 ? 30.نوری [ksoftirqd/1]
root     24      2  0 00:00:00 ? 30.نوری [kworker/1:0H-events_highpri]
root     25      2  0 00:00:00 ? 30.نوری [cpuhp/2]
root     26      2  0 00:00:00 ? 30.نوری [idle_inject/2]
root     27      2  0 00:00:00 ? 30.نوری [migration/2]
root     28      2  0 00:00:00 ? 30.نوری [ksoftirqd/2]
root     30      2  0 00:00:00 ? 30.نوری [kworker/2:0H-events_highpri]
root     31      2  0 00:00:00 ? 30.نوری [cpuhp/3]
root     32      2  0 00:00:00 ? 30.نوری [idle_inject/3]
root     33      2  0 00:00:00 ? 30.نوری [migration/3]
root     34      2  0 00:00:00 ? 30.نوری [ksoftirqd/3]
root     36      2  0 00:00:00 ? 30.نوری [kworker/3:0H-events_highpri]
root     37      2  0 00:00:00 ? 30.نوری [cpuhp/4]
root     38      2  0 00:00:00 ? 30.نوری [idle_inject/4]
root     39      2  0 00:00:00 ? 30.نوری [migration/4]
root     40      2  0 00:00:00 ? 30.نوری [ksoftirqd/4]
root     42      2  0 00:00:00 ? 30.نوری [kworker/4:0H-events_highpri]
root     43      2  0 00:00:00 ? 30.نوری [cpuhp/5]
root     44      2  0 00:00:00 ? 30.نوری [idle_inject/5]
root     45      2  0 00:00:00 ? 30.نوری [migration/5]
root     46      2  0 00:00:00 ? 30.نوری [ksoftirqd/5]
root     48      2  0 00:00:00 ? 30.نوری [kworker/5:0H-events_highpri]
root     49      2  0 00:00:00 ? 30.نوری [cpuhp/6]
root     50      2  0 00:00:00 ? 30.نوری [idle_inject/6]
root     51      2  0 00:00:00 ? 30.نوری [migration/6]
root     52      2  0 00:00:00 ? 30.نوری [ksoftirqd/6]
root     54      2  0 00:00:00 ? 30.نوری [kworker/6:0H-events_highpri]
root     55      2  0 00:00:00 ? 30.نوری [cpuhp/7]
root     56      2  0 00:00:00 ? 30.نوری [idle_inject/7]
root     57      2  0 00:00:00 ? 30.نوری [migration/7]
root     58      2  0 00:00:03 ? 30.نوری [ksoftirqd/7]
```

```
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract
```

```
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract
```

```
S 1000 26101 25969 0 80 0 94040 6386037 futex_ ? 00:00:02 chrome
S 1000 26115 25969 0 80 0 90936 6391894 futex_ ? 00:00:01 chrome
S 1000 26129 25969 0 80 0 109244 6392167 futex_ ? 00:00:02 chrome
S 1000 26136 25969 0 80 0 80424 6385747 futex_ ? 00:00:01 chrome
S 1000 26150 25969 0 80 0 112256 6392696 futex_ ? 00:00:04 chrome
S 1000 26162 25969 0 80 0 81472 6387796 futex_ ? 00:00:01 chrome
S 1000 26167 25969 0 80 0 86092 6387796 futex_ ? 00:00:01 chrome
S 1000 26427 25969 0 80 0 102208 6395218 futex_ ? 00:00:04 chrome
S 1000 27463 13992 0 80 0 5232 2805 do_sel pts/2 00:00:00 bash
I 0 28765 2 0 60 -20 0 0 - ? 00:00:00 uas
S 1000 29081 13116 0 80 0 4836 40491 pipe_r ? 00:00:00 oopsplash
S 1000 29119 29081 1 80 0 319284 437259 do_sys ? 00:00:50 softice.bin
S 1000 29204 12875 1 80 0 81728 372729 do_sys ? 00:00:40 evince
S 1000 29213 12875 0 80 0 5372 39015 do_sys ? 00:00:00 evinced
S 1000 29300 13992 0 80 0 5596 2838 do_wai pts/0 00:00:00 bash
S 1000 29371 12875 0 80 0 86556 275212 do_sys ? 00:00:03 evince
I 0 29522 2 0 80 0 0 0 - ? 00:00:03 kworker/0:2-events
S 1000 29553 13992 0 80 0 5624 2935 do_wai pts/1 00:00:00 bash
I 0 30243 2 0 80 0 0 0 - ? 00:00:02 kworker/5:2-events
S 1000 30433 25969 0 80 0 62540 6385746 futex_ ? 00:00:00 chrome
I 0 30826 2 0 80 0 0 0 - ? 00:00:01 kworker/3:1-events
I 0 31019 2 0 80 0 0 0 - ? 00:00:00 kworker/u32:0-i915
S 1000 31257 12875 2 80 0 102272 351181 do_sys ? 00:00:39 gnome-screensho
I 0 31574 2 0 80 0 0 0 - ? 00:00:00 kworker/u32:1-flush-8:0
I 0 31686 2 0 80 0 0 0 - ? 00:00:00 kworker/7:1-cgroup_destroy
I 0 32086 2 0 80 0 0 0 - ? 00:00:01 kworker/1:3-events
T 1000 32104 29300 0 80 0 2040 759 do_sig pts/0 00:00:00 sl
I 0 32263 2 0 80 0 0 0 - ? 00:00:01 kworker/2:1-events
I 0 32286 2 0 80 0 0 0 - ? 00:00:00 kworker/7:2-events
I 0 32444 2 0 80 0 0 0 - ? 00:00:00 kworker/6:2-inet_frag_wq
I 0 32508 2 0 80 0 0 0 - ? 00:00:00 kworker/4:0-cgroup_destroy
I 0 32509 2 0 80 0 0 0 - ? 00:00:00 kworker/4:1-events
I 0 32533 2 0 80 0 0 0 - ? 00:00:00 kworker/2:0-cgroup_destroy
I 0 32581 2 0 80 0 0 0 - ? 00:00:00 kworker/7:0-events
I 0 32616 2 0 80 0 0 0 - ? 00:00:00 kworker/1:1-events
I 0 32642 2 0 80 0 0 0 - ? 00:00:01 kworker/6:0-events
I 0 32674 2 0 80 0 0 0 - ? 00:00:00 kworker/3:0-cgroup_destroy
I 0 32702 2 0 80 0 0 0 - ? 00:00:00 kworker/5:0-events
I 0 32759 2 0 80 0 0 0 - ? 00:00:00 kworker/u32:2-ext4-rsv-conversion
I 0 32796 2 0 80 0 0 0 - ? 00:00:00 kworker/0:0-events
I 0 32842 2 0 80 0 0 0 - ? 00:00:00 kworker/2:2-cgroup_destroy
I 0 32890 2 0 80 0 0 0 - ? 00:00:00 kworker/u32:3-events_unbound
S 1000 32917 29553 0 80 0 4112 2562 do_wai pts/1 00:00:00 man
S 1000 32927 32917 0 80 0 2300 2195 wait_w pts/1 00:00:00 pager
I 0 32953 2 0 80 0 0 0 - ? 00:00:00 kworker/1:0
I 0 32967 2 0 80 0 0 0 - ? 00:00:00 kworker/3:2-events
I 0 32968 2 0 80 0 0 0 - ? 00:00:00 kworker/6:1-events
I 0 32985 2 0 80 0 0 0 - ? 00:00:00 kworker/4:2-events
R 1000 33030 29300 0 80 0 3284 2938 - pts/0 00:00:00 ps
```

The screenshot shows a Linux desktop environment with two terminal windows open. The left terminal window is titled 'spoofy@spoofy-Precision-M4600: ~/Downloads' and displays the command 'ps ax'. The right terminal window is titled 'spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract' and also displays the 'ps ax' command. Below the terminals is a docked application bar containing icons for various desktop applications.

```
spoofy@spoofy-Precision-M4600: ~/Downloads$ ps ax
PID TTY      STAT   TIME COMMAND
 1 ?        Ss    0:05 /sbin/init splash
 2 ?        S     0:00 [kthreadd]
 3 ?        I<    0:00 [rcu_gp]
 4 ?        I<    0:00 [rcu_par_gp]
 5 ?        I<    0:00 [slub_flushwq]
 6 ?        I<    0:00 [netns]
 8 ?        I<    0:00 [kworker/0:0H-events_highpri]
10 ?       I<    0:00 [mm_percpu_wq]
11 ?       S     0:00 [rcu_tasks_rude_]
12 ?       S     0:00 [rcu_tasks_trace]
13 ?       S     0:01 [ksoftirqd/0]
14 ?       I     0:26 [rcu_sched]
15 ?       S     0:00 [migration/0]
16 ?       S     0:00 [idle_inject/0]
18 ?       S     0:00 [cpuhp/0]
19 ?       S     0:00 [cpuhp/1]
20 ?       S     0:00 [idle_inject/1]
21 ?       S     0:00 [migration/1]
22 ?       S     0:00 [ksoftirqd/1]
24 ?       I<    0:00 [kworker/1:0H-events_highpri]
25 ?       S     0:00 [cpuhp/2]
26 ?       S     0:00 [idle_inject/2]
27 ?       S     0:00 [migration/2]
28 ?       S     0:00 [ksoftirqd/2]
30 ?       I<    0:00 [kworker/2:0H-events_highpri]
31 ?       S     0:00 [cpuhp/3]
32 ?       S     0:00 [idle_inject/3]
33 ?       S     0:00 [migration/3]
34 ?       S     0:00 [ksoftirqd/3]
36 ?       I<    0:00 [kworker/3:0H-events_highpri]
37 ?       S     0:00 [cpuhp/4]
38 ?       S     0:00 [idle_inject/4]
39 ?       S     0:00 [migration/4]
40 ?       S     0:00 [ksoftirqd/4]
42 ?       I<    0:00 [kworker/4:0H-events_highpri]
43 ?       S     0:00 [cpuhp/5]
44 ?       S     0:00 [idle_inject/5]
45 ?       S     0:00 [migration/5]
46 ?       S     0:00 [ksoftirqd/5]
48 ?       I<    0:00 [kworker/5:0H-events_highpri]
49 ?       S     0:00 [cpuhp/6]
50 ?       S     0:00 [idle_inject/6]
51 ?       S     0:00 [migration/6]
52 ?       S     0:00 [ksoftirqd/6]
54 ?       I<    0:00 [kworker/6:0H-events_highpri]
55 ?       S     0:00 [cpuhp/7]
56 ?       S     0:00 [idle_inject/7]
57 ?       S     0:00 [migration/7]
58 ?       S     0:03 [ksoftirqd/7]
```

ps axu:

```

spoofy@spoofy-Precision-M4600: ~/Downloads$ ps aux
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root      1  0.0  0.1 169436 12392 ?        Ss  0:05 30.نوری /sbin/init splash
root      2  0.0  0.0     0   0 ?       S  0:00 30.نوری [kthreadd]
root      3  0.0  0.0     0   0 ?       I<  0:00 30.نوری [rcu_gp]
root      4  0.0  0.0     0   0 ?       I<  0:00 30.نوری [rcu_par_gp]
root      5  0.0  0.0     0   0 ?       I<  0:00 30.نوری [slub_flushwq]
root      6  0.0  0.0     0   0 ?       I<  0:00 30.نوری [netns]
root      8  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/0:0H-events_highpri]
root     10  0.0  0.0     0   0 ?       I<  0:00 30.نوری [mm_percpu_wq]
root     11  0.0  0.0     0   0 ?       S  0:00 30.نوری [rcu_tasks_rude_]
root     12  0.0  0.0     0   0 ?       S  0:00 30.نوری [rcu_tasks_trace]
root     13  0.0  0.0     0   0 ?       S  0:01 30.نوری [ksoftirqd/0]
root     14  0.0  0.0     0   0 ?       I  0:26 30.نوری [rcu_sched]
root     15  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/0]
root     16  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/0]
root     18  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/0]
root     19  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/1]
root     20  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/1]
root     21  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/1]
root     22  0.0  0.0     0   0 ?       S  0:00 30.نوری [ksoftirqd/1]
root     24  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/1:0H-events_highpri]
root     25  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/2]
root     26  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/2]
root     27  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/2]
root     28  0.0  0.0     0   0 ?       S  0:00 30.نوری [ksoftirqd/2]
root     30  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/2:0H-events_highpri]
root     31  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/3]
root     32  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/3]
root     33  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/3]
root     34  0.0  0.0     0   0 ?       S  0:00 30.نوری [ksoftirqd/3]
root     36  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/3:0H-events_highpri]
root     37  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/4]
root     38  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/4]
root     39  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/4]
root     40  0.0  0.0     0   0 ?       S  0:00 30.نوری [ksoftirqd/4]
root     42  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/4:0H-events_highpri]
root     43  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/5]
root     44  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/5]
root     45  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/5]
root     46  0.0  0.0     0   0 ?       S  0:00 30.نوری [ksoftirqd/5]
root     48  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/5:0H-events_highpri]
root     49  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/6]
root     50  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/6]
root     51  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/6]
root     52  0.0  0.0     0   0 ?       S  0:00 30.نوری [ksoftirqd/6]
root     54  0.0  0.0     0   0 ?       I<  0:00 30.نوری [kworker/6:0H-events_highpri]
root     55  0.0  0.0     0   0 ?       S  0:00 30.نوری [cpuhp/7]
root     56  0.0  0.0     0   0 ?       S  0:00 30.نوری [idle_inject/7]
root     57  0.0  0.0     0   0 ?       S  0:00 30.نوری [migration/7]
root     58  0.0  0.0     0   0 ?       S  0:03 30.نوری [ksoftirad/7]



```

```

spoofy@spoofy-Precision-M4600: ~/Downloads$ ps -ejh
12742 12558 12958 ttys0 12958 Sl+ 1000 0:00 /usr/lib/gdm/gdm-x-session --run-script env GNOME_SESSION_MODE=ubuntu /usr/bin/gnome-session --systemd --session=ubuntu XDG_SEAT=seat0 LO
12958 12962 12958 ttys2 12958 Sl+ 1000 0:17 /usr/lib/xorg/xorg vt2 -displayfd 3 -auth /run/user/1000/gdm/Xauthority -background none -noretail -keeptty -verbose 3 USER=spoofy LC_TIME=ur PK
12958 12984 12958 ttys2 12958 Sl+ 1000 0:00 /usr/libexec/gnome-session-binary --systemd --session=ubuntu USER=spoofy LC_TIME=ur_PK XDG_SEAT=seat0 PTBHOME=/opt/p XDG_SESSION_TYPE
13992 27463 27463 pts/2 27463 S+ 1000 0:00 bash SSH_AUTH_SOCK=/run/user/1000/keyring/shh SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:/tn
13992 29300 29300 pts/0 31098 S+ 1000 0:00 bash SSH_AUTH_SOCK=/run/user/1000/keyring/shh SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:/tn
13992 29300 29300 pts/0 31098 S+ 1000 0:00 bash SSH_AUTH_SOCK=/run/user/1000/keyring/shh SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:/tn
23030 32184 32224 pts/0 32917 S+ 1000 0:00 man ps SHELL=/bin/bash SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102 QT_A
29553 32917 32917 29553 pts/1 32917 S+ 1000 0:00 man ps SHELL=/bin/bash SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102 QT_A
32917 32927 32917 29553 pts/1 32917 S+ 1000 0:00 pager SHELL=/bin/bash SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102 QT_A
29300 33108 33108 29300 pts/0 33108 R+ 1000 0:00 ps -ejh SHELL=/bin/bash SESSION_MANAGER=local/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102,unix/spoofy-Precision-M4600:@/tmp/.ICE-unix/13102 QT_A
spoofy@spoofy-Precision-M4600: ~/Downloads$ OSPract

```

ps axjf:

نحوی 31 شنبه 4:58

```
Activities Terminal
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract

spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps axjf
  PID   PID   PGID   SID TTY      TPGID STAT   UID    TIME COMMAND
    0     2     0     0 ?       -1 S    0 0:00 [kthreadd]
    2     3     0     0 ?       -1 I<  0 0:00 \_ [rcu_gp]
    2     4     0     0 ?       -1 I<  0 0:00 \_ [rcu_par_gp]
    2     5     0     0 ?       -1 I<  0 0:00 \_ [slub_flushwq]
    2     6     0     0 ?       -1 I<  0 0:00 \_ [netns]
    2     8     0     0 ?       -1 I<  0 0:00 \_ [kworker/0:0H-events_highpri]
    2    10     0     0 ?       -1 I<  0 0:00 \_ [mm_percpu_wq]
    2    11     0     0 ?       -1 S    0 0:00 \_ [rcu_tasks_rude_]
    2    12     0     0 ?       -1 S    0 0:00 \_ [rcu_tasks_trace]
    2    13     0     0 ?       -1 S    0 0:01 \_ [ksoftirqd/0]
    2    14     0     0 ?       -1 I    0 0:26 \_ [rcu_sched]
    2    15     0     0 ?       -1 S    0 0:00 \_ [migration/0]
    2    16     0     0 ?       -1 S    0 0:00 \_ [idle_inject/0]
    2    18     0     0 ?       -1 S    0 0:00 \_ [cpuhp/0]
    2    19     0     0 ?       -1 S    0 0:00 \_ [cpuhp/1]
    2    20     0     0 ?       -1 S    0 0:00 \_ [idle_inject/1]
    2    21     0     0 ?       -1 S    0 0:00 \_ [migration/1]
    2    22     0     0 ?       -1 S    0 0:00 \_ [ksoftirqd/1]
    2    24     0     0 ?       -1 I<  0 0:00 \_ [kworker/1:0H-events_highpri]
    2    25     0     0 ?       -1 S    0 0:00 \_ [cpuhp/2]
    2    26     0     0 ?       -1 S    0 0:00 \_ [idle_inject/2]
    2    27     0     0 ?       -1 S    0 0:00 \_ [migration/2]
    2    28     0     0 ?       -1 S    0 0:00 \_ [ksoftirqd/2]
    2    30     0     0 ?       -1 I<  0 0:00 \_ [kworker/2:0H-events_highpri]
    2    31     0     0 ?       -1 S    0 0:00 \_ [cpuhp/3]
    2    32     0     0 ?       -1 S    0 0:00 \_ [idle_inject/3]
    2    33     0     0 ?       -1 S    0 0:00 \_ [migration/3]
    2    34     0     0 ?       -1 S    0 0:00 \_ [ksoftirqd/3]
    2    36     0     0 ?       -1 I<  0 0:00 \_ [kworker/3:0H-events_highpri]
    2    37     0     0 ?       -1 S    0 0:00 \_ [cpuhp/4]
    2    38     0     0 ?       -1 S    0 0:00 \_ [idle_inject/4]
    2    39     0     0 ?       -1 S    0 0:00 \_ [migration/4]
    2    40     0     0 ?       -1 S    0 0:00 \_ [ksoftirqd/4]
    2    42     0     0 ?       -1 I<  0 0:00 \_ [kworker/4:0H-events_highpri]
    2    43     0     0 ?       -1 S    0 0:00 \_ [cpuhp/5]
    2    44     0     0 ?       -1 S    0 0:00 \_ [idle_inject/5]
    2    45     0     0 ?       -1 S    0 0:00 \_ [migration/5]
    2    46     0     0 ?       -1 S    0 0:00 \_ [ksoftirqd/5]
    2    48     0     0 ?       -1 I<  0 0:00 \_ [kworker/5:0H-events_highpri]
    2    49     0     0 ?       -1 S    0 0:00 \_ [cpuhp/6]
    2    50     0     0 ?       -1 S    0 0:00 \_ [idle_inject/6]
    2    51     0     0 ?       -1 S    0 0:00 \_ [migration/6]
    2    52     0     0 ?       -1 S    0 0:00 \_ [ksoftirqd/6]
    2    54     0     0 ?       -1 I<  0 0:00 \_ [kworker/6:0H-events_highpri]
    2    55     0     0 ?       -1 S    0 0:00 \_ [cpuhp/7]
    2    56     0     0 ?       -1 S    0 0:00 \_ [idle_inject/7]
    2    57     0     0 ?       -1 S    0 0:00 \_ [migration/7]
    2    58     0     0 ?       -1 S    0 0:03 \_ [ksoftirqd/7]
    2    60     0     0 ?       -1 I<  0 0:00 \_ [kworker/7:0H-events_highpri]
```

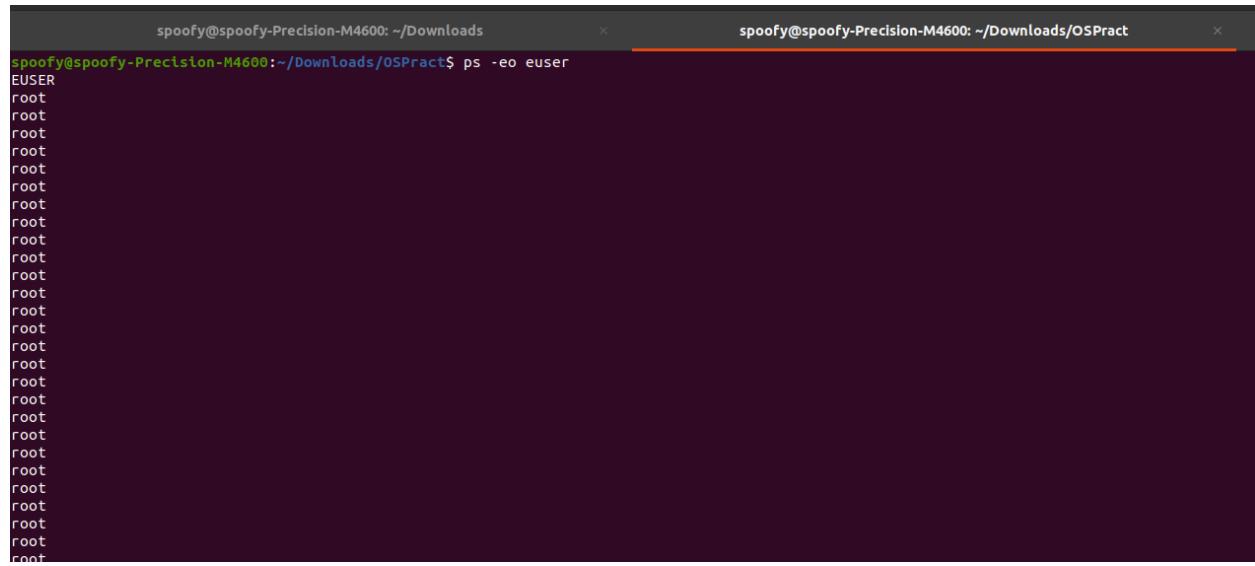
ps -eLf:

```

spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -eLf
UID      PID  PPID   LWP    C  NLWP STIME TTY          TIME CMD
root      1    0      1    0  1 00:00:06 ? 30.00:00:00 /sbin/init splash
root      2    0      2    0  1 00:00:00 ? 30.00:00:00 [kthreadd]
root      3    2      3    0  1 00:00:00 ? 30.00:00:00 [rcu_gp]
root      4    2      4    0  1 00:00:00 ? 30.00:00:00 [rcu_par_gp]
root      5    2      5    0  1 00:00:00 ? 30.00:00:00 [slub_flushwq]
root      6    2      6    0  1 00:00:00 ? 30.00:00:00 [netns]
root      8    2      8    0  1 00:00:00 ? 30.00:00:00 [kworker/0:0H-events_highpri]
root     10   2     10    0  1 00:00:00 ? 30.00:00:00 [mm_percpu_wq]
root     11   2     11    0  1 00:00:00 ? 30.00:00:00 [rcu_tasks_rude_]
root     12   2     12    0  1 00:00:00 ? 30.00:00:00 [rcu_tasks_trace]
root     13   2     13    0  1 00:00:02 ? 30.00:00:00 [ksoftirqd/0]
root     14   2     14    0  1 00:00:40 ? 30.00:00:00 [rcu_sched]
root     15   2     15    0  1 00:00:00 ? 30.00:00:00 [migration/0]
root     16   2     16    0  1 00:00:00 ? 30.00:00:00 [idle_inject/0]
root     18   2     18    0  1 00:00:00 ? 30.00:00:00 [cpuhp/0]
root     19   2     19    0  1 00:00:00 ? 30.00:00:00 [cpuhp/1]
root     20   2     20    0  1 00:00:00 ? 30.00:00:00 [idle_inject/1]
root     21   2     21    0  1 00:00:00 ? 30.00:00:00 [migration/1]
root     22   2     22    0  1 00:00:01 ? 30.00:00:00 [ksoftirqd/1]
root     24   2     24    0  1 00:00:00 ? 30.00:00:00 [kworker/1:0H-events_highpri]
root     25   2     25    0  1 00:00:00 ? 30.00:00:00 [cpuhp/2]
root     26   2     26    0  1 00:00:00 ? 30.00:00:00 [idle_inject/2]
root     27   2     27    0  1 00:00:00 ? 30.00:00:00 [migration/2]
root     28   2     28    0  1 00:00:00 ? 30.00:00:00 [ksoftirqd/2]
root     30   2     30    0  1 00:00:00 ? 30.00:00:00 [kworker/2:0H-events_highpri]
root     31   2     31    0  1 00:00:00 ? 30.00:00:00 [cpuhp/3]
root     32   2     32    0  1 00:00:00 ? 30.00:00:00 [idle_inject/3]
root     33   2     33    0  1 00:00:00 ? 30.00:00:00 [migration/3]
root     34   2     34    0  1 00:00:00 ? 30.00:00:00 [ksoftirqd/3]
root     36   2     36    0  1 00:00:00 ? 30.00:00:00 [kworker/3:0H-events_highpri]
root     37   2     37    0  1 00:00:00 ? 30.00:00:00 [cpuhp/4]
root     38   2     38    0  1 00:00:00 ? 30.00:00:00 [idle_inject/4]
root     39   2     39    0  1 00:00:00 ? 30.00:00:00 [migration/4]
root     40   2     40    0  1 00:00:00 ? 30.00:00:00 [ksoftirqd/4]
root     42   2     42    0  1 00:00:00 ? 30.00:00:00 [kworker/4:0H-events_highpri]
root     43   2     43    0  1 00:00:00 ? 30.00:00:00 [cpuhp/5]
root     44   2     44    0  1 00:00:00 ? 30.00:00:00 [idle_inject/5]
root     45   2     45    0  1 00:00:00 ? 30.00:00:00 [migration/5]
root     46   2     46    0  1 00:00:00 ? 30.00:00:00 [ksoftirqd/5]
root     48   2     48    0  1 00:00:00 ? 30.00:00:00 [kworker/5:0H-events_highpri]
root     49   2     49    0  1 00:00:00 ? 30.00:00:00 [cpuhp/6]
root     50   2     50    0  1 00:00:00 ? 30.00:00:00 [idle_inject/6]
root     51   2     51    0  1 00:00:00 ? 30.00:00:00 [migration/6]
root     52   2     52    0  1 00:00:00 ? 30.00:00:00 [ksoftirqd/6]
root     54   2     54    0  1 00:00:00 ? 30.00:00:00 [kworker/6:0H-events_highpri]
root     55   2     55    0  1 00:00:00 ? 30.00:00:00 [cpuhp/7]
root     56   2     56    0  1 00:00:00 ? 30.00:00:00 [idle_inject/7]
root     57   2     57    0  1 00:00:00 ? 30.00:00:00 [migration/7]

```

ps axms:



```
spoofy@spooky-Precision-M4600: ~/Downloads
spoofy@spooky-Precision-M4600: ~/Downloads/OSPract$ ps -eo euser
EUSER
root
```

ps -eo ruser:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -eo ruser
RUSER
root
```

ps -eo suser:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -eo suser
SUSER
root
```

ps -eo fuser:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ ps -eo fuser
FUSER
root
```

ps -eo f:

```
spooky@spooky-Precision-M4600:~/Downloads/OSPract$ ps -eo f
F
4
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
1
5
1
1
1
1
5
1
1
1
1
5
1
1
1
1
5
1
1
1
1
5
1
```

ps -eo comm:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -eo comm
COMMAND
systemd
kthreadd
rcu_gp
rcu_par_gp
slub_flushwq
netns
kworker/0:0H-events_highpri
mm_percpu_wq
rcu_tasks_rude_
rcu_tasks_trace
ksoftirqd/0
rcu_sched
migration/0
idle_inject/0
cpuhp/0
cpuhp/1
idle_inject/1
migration/1
ksoftirqd/1
kworker/1:0H-events_highpri
cpuhp/2
idle_inject/2
migration/2
ksoftirqd/2
kworker/2:0H-events_highpri
cpuhp/3
idle_inject/3
migration/3
ksoftirqd/3
kworker/3:0H-events_highpri
cpuhp/4
idle_inject/4
migration/4
ksoftirqd/4
kworker/4:0H-events_highpri
cpuhp/5
```

ps -eo label:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -eo label
LABEL
unconfined
```

ps -u root -u root u:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -U root -u root u
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root      1  0.0  0.1 169436 12128 ?        Ss  0:06 30.نوری> /sbin/init splash
root      2  0.0  0.0     0   0 ?        S  0:00 30.نوری> [kthreadd]
root      3  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [rcu_gp]
root      4  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [rcu_par_gp]
root      5  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [stub_flushwq]
root      6  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [netns]
root      8  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [kworker/0:0H-events_highpri]
root     10  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [mm_percpu_wq]
root     11  0.0  0.0     0   0 ?        S  0:00 30.نوری> [rcu_tasks_rude_]
root     12  0.0  0.0     0   0 ?        S  0:00 30.نوری> [rcu_tasks_trace]
root     13  0.0  0.0     0   0 ?        S  0:02 30.نوری> [ksoftirqd/0]
root     14  0.0  0.0     0   0 ?        I  0:40 30.نوری> [rcu_sched]
root     15  0.0  0.0     0   0 ?        S  0:00 30.نوری> [migration/0]
root     16  0.0  0.0     0   0 ?        S  0:00 30.نوری> [idle_inject/0]
root     18  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/0]
root     19  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/1]
root     20  0.0  0.0     0   0 ?        S  0:00 30.نوری> [idle_inject/1]
root     21  0.0  0.0     0   0 ?        S  0:00 30.نوری> [migration/1]
root     22  0.0  0.0     0   0 ?        S  0:01 30.نوری> [ksoftirqd/1]
root     24  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [kworker/1:0H-events_highpri]
root     25  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/2]
root     26  0.0  0.0     0   0 ?        S  0:00 30.نوری> [idle_inject/2]
root     27  0.0  0.0     0   0 ?        S  0:00 30.نوری> [migration/2]
root     28  0.0  0.0     0   0 ?        S  0:00 30.نوری> [ksoftirqd/2]
root     30  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [kworker/2:0H-events_highpri]
root     31  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/3]
root     32  0.0  0.0     0   0 ?        S  0:00 30.نوری> [idle_inject/3]
root     33  0.0  0.0     0   0 ?        S  0:00 30.نوری> [migration/3]
root     34  0.0  0.0     0   0 ?        S  0:00 30.نوری> [ksoftirqd/3]
root     36  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [kworker/3:0H-events_highpri]
root     37  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/4]
root     38  0.0  0.0     0   0 ?        S  0:00 30.نوری> [idle_inject/4]
root     39  0.0  0.0     0   0 ?        S  0:00 30.نوری> [migration/4]
root     40  0.0  0.0     0   0 ?        S  0:00 30.نوری> [ksoftirqd/4]
root     42  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [kworker/4:0H-events_highpri]
root     43  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/5]
root     44  0.0  0.0     0   0 ?        S  0:00 30.نوری> [idle_inject/5]
root     45  0.0  0.0     0   0 ?        S  0:00 30.نوری> [migration/5]
root     46  0.0  0.0     0   0 ?        S  0:00 30.نوری> [ksoftirqd/5]
root     48  0.0  0.0     0   0 ?        I<  0:00 30.نوری> [kworker/5:0H-events_highpri]
root     49  0.0  0.0     0   0 ?        S  0:00 30.نوری> [cpuhp/6]
```

ps -q 42 -o comm=42

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -q 42 -o comm=42
42
kworker/4:0H-events highpri
```

ps a:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps a
 PID TTY      STAT   TIME COMMAND
12958 tty2    Ssl+  0:00 /usr/lib/gdm/gdm-x-session --run-script env GNOME_SHELL_SESSION_MODE=ubuntu /usr/bin/gnome-session --systemd --session=ubuntu
12962 tty2    Sl+   12:25 /usr/lib/xorg/Xorg vt2 -displayfd 3 -auth /run/user/1000/gdm/Xauthority -background none -noreset -keeptty -verbose 3
12984 tty2    Sl+   0:00 /usr/libexec/gnome-session-binary --systemd --session=ubuntu
27463 pts/2   Ss+   0:00 bash
29300 pts/0   Ss    0:00 bash
29553 pts/1   Ss    0:00 bash
32104 pts/0   T     0:00 sl
32917 pts/1   S+    0:00 man ps
32927 pts/1   S+    0:00 pager
41677 pts/0   R+    0:00 ps a
```

ps -A:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -A
 PID TTY      TIME CMD
  1 ?    00:00:07 systemd
  2 ?    00:00:00 kthreadd
  3 ?    00:00:00 rcu_gp
  4 ?    00:00:00 rcu_par_gp
  5 ?    00:00:00 slub_flushwq
  6 ?    00:00:00 netns
  8 ?    00:00:00 kworker/0:0H-events_highpri
 10 ?   00:00:00 mm_percpu_wq
 11 ?   00:00:00 rcu_tasks_rude_
 12 ?   00:00:00 rcu_tasks_trace
 13 ?   00:00:02 ksoftirqd/0
 14 ?   00:00:41 rcu_sched
 15 ?   00:00:00 migration/0
 16 ?   00:00:00 idle_inject/0
 18 ?   00:00:00 cpuhp/0
 19 ?   00:00:00 cpuhp/1
 20 ?   00:00:00 idle_inject/1
 21 ?   00:00:00 migration/1
 22 ?   00:00:01 ksoftirqd/1
 24 ?   00:00:00 kworker/1:0H-events_highpri
 25 ?   00:00:00 cpuhp/2
 26 ?   00:00:00 idle_inject/2
 27 ?   00:00:00 migration/2
 28 ?   00:00:00 ksoftirqd/2
 30 ?   00:00:00 kworker/2:0H-events_highpri
 31 ?   00:00:00 cpuhp/3
 32 ?   00:00:00 idle_inject/3
 33 ?   00:00:00 migration/3
 34 ?   00:00:00 ksoftirqd/3
 36 ?   00:00:00 kworker/3:0H-events_highpri
 37 ?   00:00:00 cpuhp/4
 38 ?   00:00:00 idle_inject/4
 39 ?   00:00:00 migration/4
 40 ?   00:00:00 ksoftirqd/4
 42 ?   00:00:00 kworker/4:0H-events_highpri
 43 ?   00:00:00 cpuhp/5
 44 ?   00:00:00 idle_inject/5
 45 ?   00:00:00 migration/5
 46 ?   00:00:00 ksoftirqd/5
 48 ?   00:00:00 kworker/5:0H-events_highpri
 49 ?   00:00:00 cpuhp/6
 50 ?   00:00:00 idle_inject/6
 51 ?   00:00:00 migration/6
 52 ?   00:00:00 ksoftirqd/6
```

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ps -A
  PID TTY      TIME CMD
    1 ?        00:00:07 systemd
    2 ?        00:00:00 kthreadd
    3 ?        00:00:00 rcu_gp
    4 ?        00:00:00 rcu_par_gp
    5 ?        00:00:00 slub_flushwq
    6 ?        00:00:00 netns
    8 ?        00:00:00 kworker/0:0H-events_highpri
   10 ?       00:00:00 mm_percpu_wq
   11 ?       00:00:00 rcu_tasks_rude_
   12 ?       00:00:00 rcu_tasks_trace
   13 ?       00:00:02 ksoftirqd/0
   14 ?       00:00:41 rcu_sched
   15 ?       00:00:00 migration/0
   16 ?       00:00:00 idle_inject/0
   18 ?       00:00:00 cpuhp/0
   19 ?       00:00:00 cpuhp/1
   20 ?       00:00:00 idle_inject/1
   21 ?       00:00:00 migration/1
   22 ?       00:00:01 ksoftirqd/1
   24 ?       00:00:00 kworker/1:0H-events_highpri
   25 ?       00:00:00 cpuhp/2
   26 ?       00:00:00 idle_inject/2
   27 ?       00:00:00 migration/2
   28 ?       00:00:00 ksoftirqd/2
   30 ?       00:00:00 kworker/2:0H-events_highpri
   31 ?       00:00:00 cpuhp/3
   32 ?       00:00:00 idle_inject/3
   33 ?       00:00:00 migration/3
   34 ?       00:00:00 ksoftirqd/3
   36 ?       00:00:00 kworker/3:0H-events_highpri
   37 ?       00:00:00 cpuhp/4
   38 ?       00:00:00 idle_inject/4
   39 ?       00:00:00 migration/4
   40 ?       00:00:00 ksoftirqd/4
   42 ?       00:00:00 kworker/4:0H-events_highpri
   43 ?       00:00:00 cpuhp/5
   44 ?       00:00:00 idle_inject/5
   45 ?       00:00:00 migration/5
   46 ?       00:00:00 ksoftirqd/5
   48 ?       00:00:00 kworker/5:0H-events_highpri
   49 ?       00:00:00 cpuhp/6
   50 ?       00:00:00 idle_inject/6
   51 ?       00:00:00 migration/6
   52 ?       00:00:00 ksoftirqd/6
```

Network Related Commands:

ping google.com:

```

spoofy@spoofy-Precision-M4600: ~/Downloads $ ping google.com
PING google.com (142.250.181.110) 56(84) bytes of data.
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=1 ttl=118 time=76.7 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=2 ttl=118 time=54.5 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=3 ttl=118 time=54.1 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=4 ttl=118 time=61.1 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=5 ttl=118 time=54.4 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=6 ttl=118 time=226 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=7 ttl=118 time=49.5 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=8 ttl=118 time=175 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=9 ttl=118 time=46.8 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=10 ttl=118 time=70.2 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=11 ttl=118 time=50.5 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=12 ttl=118 time=138 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=13 ttl=118 time=66.5 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=14 ttl=118 time=75.3 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=15 ttl=118 time=66.2 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=16 ttl=118 time=58.4 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=17 ttl=118 time=168 ms
64 bytes from fjr04s08-in-f14.1e100.net (142.250.181.110): icmp_seq=18 ttl=118 time=60.6 ms
^C
--- google.com ping statistics ---
18 packets transmitted, 18 received, 0% packet loss, time 17018ms
rtt min/avg/max/mdev = 46.789/86.201/226.230/51.297 ms
spoofy@spoofy-Precision-M4600: ~/Downloads $ OSPract

```

netstat:

```

spoofy@spoofy-Precision-M4600: ~/Downloads $ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address          Foreign Address        State
tcp     0      0 192.168.18.107:46884    wo-in-f188.1e100.:https ESTABLISHED
tcp     0      0 192.168.18.107:52972    s3-us-west-2.amaz:https ESTABLISHED
tcp     0      0 192.168.18.107:55958    ec2-52-41-49-208.:https ESTABLISHED
tcp     0      0 192.168.18.107:57120    ec2-34-237-73-95.:https ESTABLISHED
tcp     0      0 192.168.18.107:59195    162-254-196-67.va:27025 ESTABLISHED
tcp     0      0 192.168.18.107:52956    s3-us-west-2.amaz:https ESTABLISHED
tcp     0      0 192.168.18.107:42920    server-52-85-65-3:https ESTABLISHED
tcp     0      0 192.168.18.107:41110    104.18.6.183:https ESTABLISHED
tcp     0      0 192.168.18.107:52570    104.18.7.183:https ESTABLISHED
tcp     1      1 192.168.18.107:52886    s3-us-west-2.amaz:https LAST_ACK
tcp     0      0 192.168.18.107:41120    104.18.6.183:https TIME_WAIT
tcp     0      0 192.168.18.107:42924    server-52-85-65-3:https ESTABLISHED
udp     0      0 192.168.18.107:bootpc  192.168.18.1:bootps ESTABLISHED
udp     0      0 192.168.18.107:51626    fjr04s09-in-f10.1e1:443 ESTABLISHED

Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type            State           I-Node  Path
unix  2      [ ]        DGRAM           216918 /run/user/1000/systemd/notify
unix  2      [ ]        DGRAM           543452 /run/wpa_supplicant/wlp2s0
unix  3      [ ]        DGRAM           20665  /run/systemd/notify
unix  2      [ ]        DGRAM           20679  /run/systemd/journal/syslog
unix  19     [ ]        DGRAM           20689  /run/systemd/journal/dev-log
unix  10     [ ]        DGRAM           20693  /run/systemd/journal/socket
unix  3      [ ]        SEQPACKET        CONNECTED      481166 @0002d
unix  2      [ ]        DGRAM           50293  @0000a
unix  3      [ ]        SEQPACKET        CONNECTED      481168 @0002e
unix  3      [ ]        SEQPACKET        CONNECTED      479213 @0002b
unix  3      [ ]        SEQPACKET        CONNECTED      481161 @0002c
unix  3      [ ]        SEQPACKET        CONNECTED      479212 @0002a
unix  3      [ ]        SEQPACKET        CONNECTED      548800 @00031
unix  3      [ ]        SEQPACKET        CONNECTED      485497 @00027
unix  3      [ ]        SEQPACKET        CONNECTED      548802 @00032
unix  3      [ ]        SEQPACKET        CONNECTED      485499 @00028
unix  3      [ ]        SEQPACKET        CONNECTED      481160 @00029
unix  3      [ ]        STREAM           CONNECTED     247146 /run/systemd/journal/stdout
unix  3      [ ]        DGRAM           216919 CONNECTED
unix  3      [ ]        STREAM           CONNECTED     32689  /run/dbus/system_bus_socket
unix  3      [ ]        STREAM           CONNECTED     498869
unix  3      [ ]        STREAM           CONNECTED     482593
unix  3      [ ]        STREAM           CONNECTED     263022 /run/dbus/system_bus_socket
unix  3      [ ]        STREAM           CONNECTED     215705 /run/systemd/journal/stdout

```

```

spoofy@spoofy-Precision-M4600: ~/Downloads
x
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract

unix 3 [ ] STREAM CONNECTED 487521
unix 3 [ ] STREAM CONNECTED 491719
unix 3 [ ] STREAM CONNECTED 481988
unix 3 [ ] STREAM CONNECTED 243052
unix 3 [ ] STREAM CONNECTED 243036
unix 3 [ ] STREAM CONNECTED 222735
unix 3 [ ] STREAM CONNECTED 217723 /run/user/1000/bus
unix 3 [ ] STREAM CONNECTED 224432
unix 3 [ ] STREAM CONNECTED 539903
unix 3 [ ] STREAM CONNECTED 486697
unix 3 [ ] STREAM CONNECTED 478963
unix 3 [ ] STREAM CONNECTED 484915 @/tmp/.X11-unix/X0
unix 3 [ ] STREAM CONNECTED 482588 @/tmp/.X11-unix/X0
unix 3 [ ] STREAM CONNECTED 266024
unix 2 [ ] DGRAM 219867
unix 3 [ ] STREAM CONNECTED 218986 /run/user/1000/bus
unix 3 [ ] STREAM CONNECTED 219578
unix 3 [ ] STREAM CONNECTED 43157
unix 3 [ ] SEQPACKET CONNECTED 548803
unix 3 [ ] STREAM CONNECTED 555055 @/tmp/.X11-unix/X0
unix 3 [ ] STREAM CONNECTED 246551 /run/systemd/journal/stdout
unix 3 [ ] STREAM CONNECTED 221828
unix 3 [ ] STREAM CONNECTED 39711
unix 3 [ ] DGRAM CONNECTED 20667
unix 3 [ ] STREAM CONNECTED 239292
unix 3 [ ] STREAM CONNECTED 228649 /run/systemd/journal/stdout
unix 3 [ ] STREAM CONNECTED 222120 @/dbus-vfs-daemon/socket-5qT4JYZC
unix 3 [ ] STREAM CONNECTED 219736 /run/dbus/system_bus_socket
unix 3 [ ] STREAM CONNECTED 218964
unix 3 [ ] STREAM CONNECTED 48278 /run/containerd/containerd.sock
unix 3 [ ] STREAM CONNECTED 29152 /run/systemd/journal/stdout
unix 2 [ ] DGRAM 36548
unix 3 [ ] STREAM CONNECTED 36442
unix 3 [ ] STREAM CONNECTED 553422
unix 3 [ ] STREAM CONNECTED 485568
unix 3 [ ] STREAM CONNECTED 486057
unix 3 [ ] STREAM CONNECTED 215591
unix 3 [ ] STREAM CONNECTED 217256 /run/systemd/journal/stdout
unix 3 [ ] STREAM CONNECTED 551382
unix 3 [ ] STREAM CONNECTED 539905
unix 3 [ ] STREAM CONNECTED 491718 /run/user/1000/pulse/native
unix 3 [ ] STREAM CONNECTED 240616 /run/dbus/system_bus_socket
unix 3 [ ] STREAM CONNECTED 221890 /run/user/1000/bus
unix 3 [ ] STREAM CONNECTED 221004
unix 3 [ ] STREAM CONNECTED 218721 /run/systemd/journal/stdout
unix 3 [ ] STREAM CONNECTED 219474 /run/systemd/journal/stdout
unix 3 [ ] STREAM CONNECTED 480677
unix 3 [ ] STREAM CONNECTED 222704 @/tmp/dbus-02YCwk4W3C
unix 3 [ ] DGRAM CONNECTED 15345

spoofy@spoofy-Precision-M4600:~/Downloads$ 

```

nslookup google.com

```

spoofy@spoofy-Precision-M4600: ~/Downloads
x
spoofy@spoofy-Precision-M4600: ~/Downloads/OSPract

spoofy@spoofy-Precision-M4600:~/Downloads$ nslookup google.com
Server: 8.8.8.8
Address: 8.8.8.8#53

Non-authoritative answer:
Name: google.com
Address: 142.250.181.110
Name: google.com
Address: 2a00:1450:4019:80c::200e

spoofy@spoofy-Precision-M4600:~/Downloads$ 

```

VIM:

sudo apt install vim:

```
spoofy@spoofy-Precision-M4600:~$ sudo apt install vim
[sudo] password for spoofy:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
vim is already the newest version (2:8.1.2269-1ubuntu5.11).
The following packages were automatically installed and are no longer required:
  gyp libbjs-inherits libbjs-is-typedarray libbjs-psl libbjs-sphinxdoc libbjs-typedarray-to-buffer libqt5designer5 libqt5help5 libqt5sql5 libqt5sql5-sqlite libqt5test5 libsecret-tools libssl-dev libuv1-dev
  protonvpn-cll protonvpn-gui python-pkg-resources python3-dialog python3-dnspython python3-gnupg python3-gpg python3-proton-client python3-proton-nm-lib python3-psutil python3-pyqt5 python3-sip
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 151 not upgraded.
spoofy@spoofy-Precision-M4600:~$
```

vim Sherjeel.txt:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ vim Sherjeel.txt
```

```
Muhammad Sherjeel Akhtar
Batch:2B
Section-BCS-4A
~
~
```

vim 20p0101.txt:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ vim 20p0101.txt
```

```
20p-0101
p200101@pwr.nu.edu.pk
~
~
```

Concatenation:

cat Sherjeel.txt 20p0101.txt>>Personal_Info.txt

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ cat Sherjeel.txt 20p0101.txt >> Personal_Info.txt
```

Displaying:

cat Personal_Info.txt

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ cat Personal_Info.txt
Muhammad Sherjeel Akhtar
Batch-20
Section-BCS-4A

20p-0101
p200101@pwr.nu.edu.pk
```

ls:

```
spoofy@spoofy-Precision-M4600:~/Downloads/OSPract$ ls
20p0101.txt  Hollow.txt  Sherjeel.txt  Temp1  Temp3      testified.txt          'week # 03 - Commands in detail.pdf'
hello.txt    Personal_Info.txt  Task-1.pdf   Temp2  testdoc.txt  'week # 02 - Basics of Ubuntu.pdf'
```