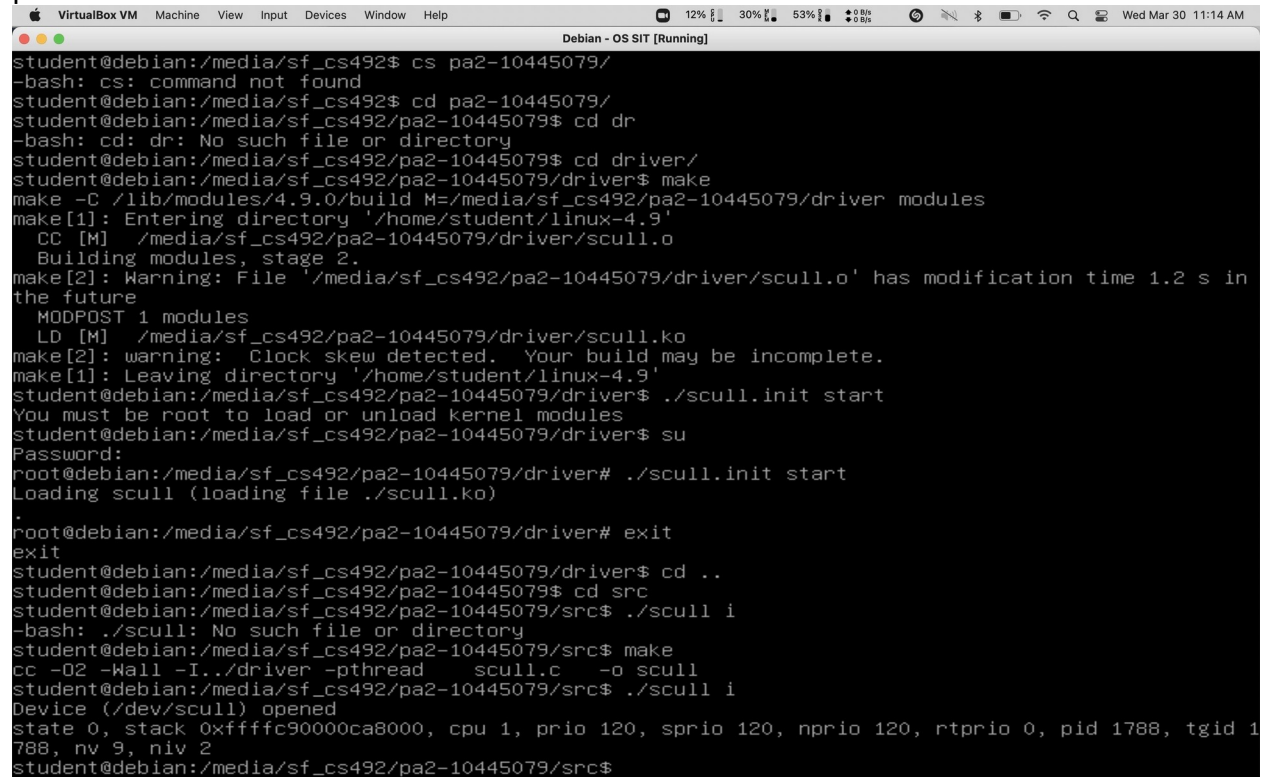


Jessica Noel

I pledge my honor that I have abided by the Stevens Honor System

part e:



```
student@debian:/media/sf_cs492$ cs pa2-10445079/
-bash: cs: command not found
student@debian:/media/sf_cs492$ cd pa2-10445079/
student@debian:/media/sf_cs492/pa2-10445079$ cd dr
-bash: cd: dr: No such file or directory
student@debian:/media/sf_cs492/pa2-10445079$ cd driver/
student@debian:/media/sf_cs492/pa2-10445079/driver$ make
make -C /lib/modules/4.9.0/build M=/media/sf_cs492/pa2-10445079/driver modules
make[1]: Entering directory '/home/student/linux-4.9'
CC [M] /media/sf_cs492/pa2-10445079/driver/scull.o
Building modules, stage 2.
make[2]: Warning: File '/media/sf_cs492/pa2-10445079/driver/scull.o' has modification time 1.2 s in
the future
MODPOST 1 modules
LD [M] /media/sf_cs492/pa2-10445079/driver/scull.ko
make[2]: warning: Clock skew detected. Your build may be incomplete.
make[1]: Leaving directory '/home/student/linux-4.9'
student@debian:/media/sf_cs492/pa2-10445079/driver$ ./scull.init start
You must be root to load or unload kernel modules
student@debian:/media/sf_cs492/pa2-10445079/driver$ su
Password:
root@debian:/media/sf_cs492/pa2-10445079/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/media/sf_cs492/pa2-10445079/driver# exit
exit
student@debian:/media/sf_cs492/pa2-10445079/driver$ cd ..
student@debian:/media/sf_cs492/pa2-10445079$ cd src
student@debian:/media/sf_cs492/pa2-10445079/src$ ./scull i
-bash: ./scull: No such file or directory
student@debian:/media/sf_cs492/pa2-10445079/src$ make
cc -O2 -Wall -I../driver -pthread scull.c -o scull
student@debian:/media/sf_cs492/pa2-10445079/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffc90000ca8000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 1788, tgid 1
788, nv 9, niv 2
student@debian:/media/sf_cs492/pa2-10445079/src$
```

part f 1:

```
Debian - OS SIT [Running]
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ 
student@debian:/media/sf_cs492/pa2-10445079/drivers$ su
Password:
root@debian:/media/sf_cs492/pa2-10445079/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
root@debian:/media/sf_cs492/pa2-10445079/driver# _
```

part f 2:

```
VirtualBox VM Machine View Input Devices Window Help
Debian - OS SIT [Running]
9% 31% 53% 0 B/s 1.023 B/s
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ 
student@debian:/media/sf_cs492/pa2-10445079/driver$ su
Password:
root@debian:/media/sf_cs492/pa2-10445079/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/media/sf_cs492/pa2-10445079/driver# exit
exit
student@debian:/media/sf_cs492/pa2-10445079/driver$ cd ..
student@debian:/media/sf_cs492/pa2-10445079$ cd src
student@debian:/media/sf_cs492/pa2-10445079/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffc90000ea8000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 2146, tgid 2146, nv 9, niv 2
student@debian:/media/sf_cs492/pa2-10445079/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffc90000ea8000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 2147, tgid 2147, nv 5, niv 2
student@debian:/media/sf_cs492/pa2-10445079/src$
```

part f 3:

```
VirtualBox VM Machine View Input Devices Window Help
Debian - OS SIT [Running]
root@debian:/media/sf_cs492/pa2-10445079/driver#
root@debian:/media/sf_cs492/pa2-10445079/driver#
root@debian:/media/sf_cs492/pa2-10445079/driver#
root@debian:/media/sf_cs492/pa2-10445079/driver#
root@debian:/media/sf_cs492/pa2-10445079/driver#
root@debian:/media/sf_cs492/pa2-10445079/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/media/sf_cs492/pa2-10445079/driver# cd ..
root@debian:/media/sf_cs492/pa2-10445079# exit
exit
student@debian:/media/sf_cs492/pa2-10445079/driver$ cd src
-bash: cd: src: No such file or directory
student@debian:/media/sf_cs492/pa2-10445079/driver$ cd ..
student@debian:/media/sf_cs492/pa2-10445079$ cd src
student@debian:/media/sf_cs492/pa2-10445079/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffc90000ec0000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 2178, tgid 2178, nv 9, niv 1
student@debian:/media/sf_cs492/pa2-10445079/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffc90000ec0000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 2179, tgid 2179, nv 9, niv 2
student@debian:/media/sf_cs492/pa2-10445079/src$ cd ..
student@debian:/media/sf_cs492/pa2-10445079$ cd driver/
student@debian:/media/sf_cs492/pa2-10445079/driver$ su
Password:
root@debian:/media/sf_cs492/pa2-10445079/driver# rmmod scull
root@debian:/media/sf_cs492/pa2-10445079/driver# dmesg | tail -6
[ 416.762730] scull open
[ 416.788271] scull close
[ 419.000230] scull open
[ 419.026350] scull close
[ 449.230414] Task 1: PID: 2178; TID: 2178
[ 449.230417] Task 2: PID: 2179; TID: 2179
root@debian:/media/sf_cs492/pa2-10445079/driver#
```

part g-1: (Running scull p and unloading + dmesg | tail -6)

```
VirtualBox VM Machine View Input Devices Window Help
Debian - OS SIT [Running]
[ 5138.624458] scull close
[ 5153.932791] Task 1: PID: 4674; TID: 4674
[ 5153.932794] Task 2: PID: 4675; TID: 4675
root@debian:/media/sf_cs492/pa2-10445079/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/media/sf_cs492/pa2-10445079/driver# cd ..
root@debian:/media/sf_cs492/pa2-10445079# cd src
root@debian:/media/sf_cs492/pa2-10445079/src# ./scull p
Device (/dev/scull) opened
state 0, stack 0xffffc90002580000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4695, tgid 4695, nv 1, niv 0
state 0, stack 0xffffc90002730000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4697, tgid 4697, nv 1, niv 0
state 0, stack 0xffffc90002580000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4695, tgid 4695, nv 1, niv 0
state 0, stack 0xffffc90002730000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4697, tgid 4697, nv 2, niv 0
state 0, stack 0xffffc90002558000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4696, tgid 4696, nv 0, niv 1
state 0, stack 0xffffc90002558000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4696, tgid 4696, nv 1, niv 1
state 0, stack 0xffffc90002738000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4698, tgid 4698, nv 0, niv 1
state 0, stack 0xffffc90002738000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4698, tgid 4698, nv 1, niv 2
ioctl: Success
Device (/dev/scull) closed
root@debian:/media/sf_cs492/pa2-10445079/src# dmesg | tail -6
[ 5138.596562] scull open
[ 5138.624458] scull close
[ 5153.932791] Task 1: PID: 4674; TID: 4674
[ 5153.932794] Task 2: PID: 4675; TID: 4675
[ 5256.949832] scull open
[ 5256.994247] scull close
root@debian:/media/sf_cs492/pa2-10445079/src#
root@debian:/media/sf_cs492/pa2-10445079/src# _
```

part g-2: (Running scull t and unloading + dmesg | tail -6)

```
VirtualBox VM Machine View Input Devices Window Help
Debian - OS SIT [Running]
[ 5138.596562] scull open
[ 5138.624458] scull close
[ 5153.932791] Task 1: PID: 4674; TID: 4674
[ 5153.932794] Task 2: PID 4675; TID: 4675
[ 5256.949832] scull open
[ 5256.994247] scull close
root@debian:/media/sf_cs492/pa2-10445079/src# dmesg | tail -6
root@debian:/media/sf_cs492/pa2-10445079/src# ./scull t
Device (/dev/scull) opened
state 0, stack 0xffffc90002758000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4705, tgid 4701, nv 0, niv 0
state 0, stack 0xffffc90002758000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 4705, tgid 4701, nv 0, niv 0
state 0, stack 0xffffc90002740000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4702, tgid 4701, nv 0, niv 0
state 0, stack 0xffffc90002740000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4702, tgid 4701, nv 1, niv 0
state 0, stack 0xffffc90002748000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4703, tgid 4701, nv 0, niv 0
state 0, stack 0xffffc90002750000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4704, tgid 4701, nv 0, niv 0
state 0, stack 0xffffc90002750000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4704, tgid 4701, nv 2, niv 0
state 0, stack 0xffffc90002748000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 4703, tgid 4701, nv 1, niv 1
Device (/dev/scull) closed
root@debian:/media/sf_cs492/pa2-10445079/src# dmesg | tail -6
[ 5153.932791] Task 1: PID: 4674; TID: 4674
[ 5153.932794] Task 2: PID 4675; TID: 4675
[ 5256.949832] scull open
[ 5256.994247] scull close
[ 5328.067792] scull open
[ 5328.078101] scull close
root@debian:/media/sf_cs492/pa2-10445079/src# _
```