

PA5 Screenshots

Connor Ivancik

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

5.1

Here I am showing that when size is 10 and elemsz is 3. Only 3 bytes will be copied and stored

```
civancik@debian:~/civancik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=10 scull_fifo_elemsz=3
civancik@debian:~/civancik-pa5/src$ ./producer p 2
Device (/dev/scull) opened
write: Connor Ivancik
write: Connor Ivancik
Device (/dev/scull) closed
civancik@debian:~/civancik-pa5/src$ ./consumer p 2
Device (/dev/scull) opened
read: Con
read: Con
Device (/dev/scull) closed
civancik@debian:~/civancik-pa5/src$ id
uid=1000(civancik) gid=1000(civancik) groups=1000(civancik),27(sudo),999(vboxsf)
civancik@debian:~/civancik-pa5/src$
```

5.2

Here i am showing how when size is 10 and elemsz is 30, the entire string is copied and stored

```
civancik@debian:~/civancik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=10 scull_fifo_elemsz=30
civancik@debian:~/civancik-pa5/src$ ./producer p 2
Device (/dev/scull) opened
write: Connor Ivancik
write: Connor Ivancik
Device (/dev/scull) closed
civancik@debian:~/civancik-pa5/src$ ./consumer p 2
Device (/dev/scull) opened
read: Connor Ivancik
read: Connor Ivancik
Device (/dev/scull) closed
civancik@debian:~/civancik-pa5/src$ id
uid=1000(civancik) gid=1000(civancik) groups=1000(civancik),27(sudo),999(vboxsf)
civancik@debian:~/civancik-pa5/src$
```

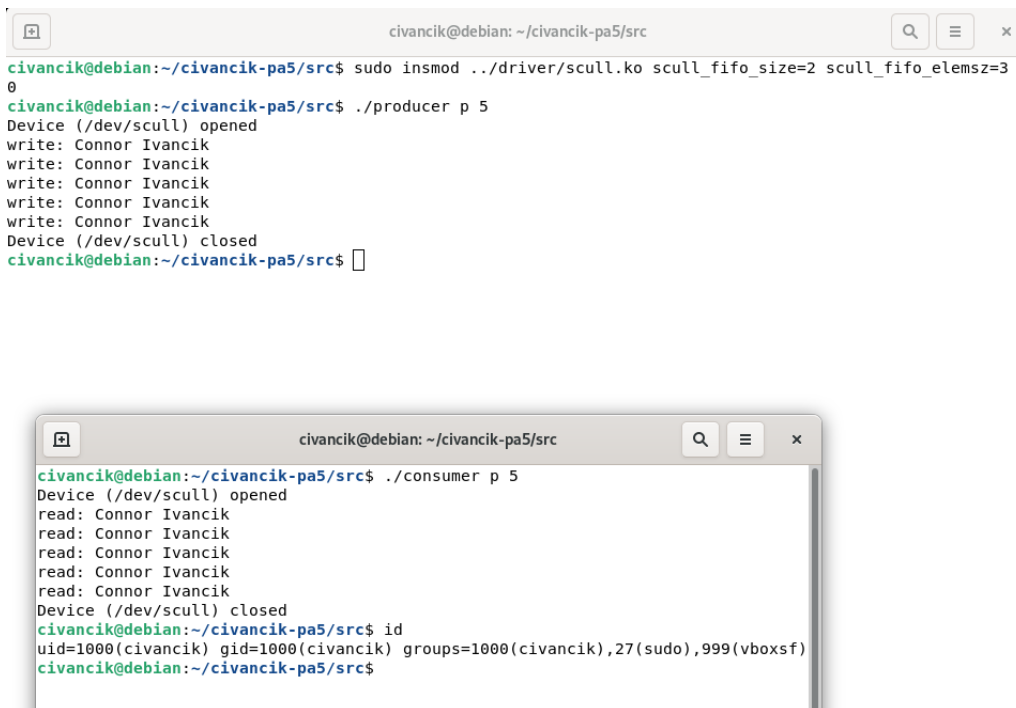
5.3

Here this shows how producer and consumer are both paused by the semaphore when there is no more room to read or write

```
civancik@debian:~/civancik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=2 scull_fifo_elemsz=3
0
civancik@debian:~/civancik-pa5/src$ ./producer p 5
Device (/dev/scull) opened
write: Connor Ivancik
write: Connor Ivancik
write: Connor Ivancik
write: Connor Ivancik
write: Connor Ivancik
^C
civancik@debian:~/civancik-pa5/src$ ./consumer p 5
Device (/dev/scull) opened
read: Connor Ivancik
read: Connor Ivancik
^C
civancik@debian:~/civancik-pa5/src$ id
uid=1000(civancik) gid=1000(civancik) groups=1000(civancik),27(sudo),999(vboxsf)
civancik@debian:~/civancik-pa5/src$
```

5.4

Here, this shows how when both code are ran at the same time in different terminals with the above settings, the semaphores will use up and down correctly to make room in the queue to read and write



The image shows two terminal windows side-by-side, both with the title bar 'civancik@debian: ~/civancik-pa5/src'. The top window shows the execution of the producer process, and the bottom window shows the execution of the consumer process. Both processes are running successfully, demonstrating the correct use of semaphores to manage shared resources.

```
civancik@debian:~/civancik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=2 scull_fifo_elemsz=3
0
civancik@debian:~/civancik-pa5/src$ ./producer p 5
Device (/dev/scull) opened
write: Connor Ivancik
write: Connor Ivancik
write: Connor Ivancik
write: Connor Ivancik
write: Connor Ivancik
Device (/dev/scull) closed
civancik@debian:~/civancik-pa5/src$
```

```
civancik@debian:~/civancik-pa5/src$ ./consumer p 5
Device (/dev/scull) opened
read: Connor Ivancik
read: Connor Ivancik
read: Connor Ivancik
read: Connor Ivancik
read: Connor Ivancik
Device (/dev/scull) closed
civancik@debian:~/civancik-pa5/src$ id
uid=1000(civancik) gid=1000(civancik) groups=1000(civancik),27(sudo),999(vboxsf)
civancik@debian:~/civancik-pa5/src$
```