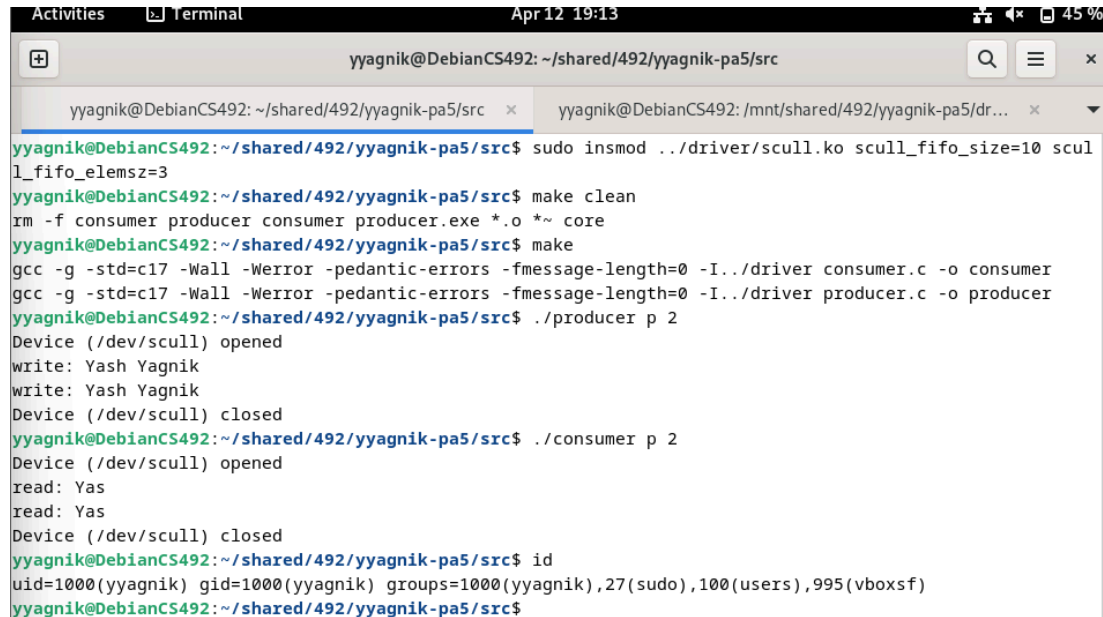


Yash Yagnik

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

SS for First insmod; 5.1

Load the module with a large `scull_fifo_size` and a small `scull_fifo_elemsz`. Start 2 producers and then 2 consumers. For example:

A terminal window titled 'Terminal' with a timestamp of 'Apr 12 19:13'. The window shows a series of commands and their outputs. The user is in a directory ~/shared/492/yyagnik-pa5/src. They run 'sudo insmod ../driver/scull.ko scull_fifo_size=10 scull_fifo_elemsz=3'. Then they run 'make clean' and 'make'. The output shows the compilation of 'consumer.c' and 'producer.c'. They then run './producer p 2' and './consumer p 2'. The output shows the device being opened, writing 'Yash Yagnik', and then closing. Finally, they run 'id' showing their user and group IDs.

```
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=10 scull_fifo_elemsz=3
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$ make clean
rm -f consumer producer consumer producer.exe *.o *~ core
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$ make
gcc -g -std=c17 -Wall -Werror -pedantic-errors -fmessage-length=0 -I../driver consumer.c -o consumer
gcc -g -std=c17 -Wall -Werror -pedantic-errors -fmessage-length=0 -I../driver producer.c -o producer
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$ ./producer p 2
Device (/dev/scull) opened
write: Yash Yagnik
write: Yash Yagnik
Device (/dev/scull) closed
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$ ./consumer p 2
Device (/dev/scull) opened
read: Yas
read: Yas
Device (/dev/scull) closed
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$ id
uid=1000(yyagnik) gid=1000(yyagnik) groups=1000(yyagnik),27(sudo),100(users),995(vboxsf)
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src$
```

SS for Second insmod; 5.2

Reload the module with a large `scull_fifo_size` and a large `scull_fifo_elemsz`. Start 2 producers and then 2 consumers.

```
Activities Terminal Apr 12 19:16 44 %
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src x yyagnik@DebianCS492: /mnt/shared/492/yyagnik-pa5/dr... x
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ sudo chmod o+rw /dev/scull
[sudo] password for yyagnik:
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=10 scull_fifo_elemsz=30
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ ./producer p 2
Device (/dev/scull) opened
write: Yash Yagnik
write: Yash Yagnik
Device (/dev/scull) closed
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ ./consumer p 2
Device (/dev/scull) opened
read: Yash Yagnik
read: Yash Yagnik
Device (/dev/scull) closed
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ id
uid=1000(yyagnik) gid=1000(yyagnik) groups=1000(yyagnik),27(sudo),100(users),995(vboxsf)
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$
```

SS for Third insmod; 5.3

Then start 5 consumers and show that some of them print messages and the remaining consumers block waiting for producers (then use Ctrl-c to kill the remaining consumers).

```
Activities Terminal Apr 12 19:19 42 %
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src x yyagnik@DebianCS492: /mnt/shared/492/yyagnik-pa5/dr... x
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ sudo insmod ../driver/scull.ko scull_fifo_size=2 scull_fifo_elemsz=30
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ ./producer p 5
Device (/dev/scull) opened
write: Yash Yagnik
write: Yash Yagnik
write: Yash Yagnik
write: Yash Yagnik
write: Yash Yagnik
^C
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ ./consumer p 5
Device (/dev/scull) opened
read: Yash Yagnik
read: Yash Yagnik
^C
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$
```

SS for Fourth insmod; 5.4. 5

consumers in the second terminal and show that all blocked producers and all consumers then terminate.

```
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ ./producer p 5
Device (/dev/scull) opened
write: Yash Yagnik
write: Yash Yagnik
write: Yash Yagnik
write: Yash Yagnik
write: Yash Yagnik
Device (/dev/scull) closed
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$
```

```
yyagnik@DebianCS492: ~/shared/492/yyagnik-pa5/src
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$ ./consumer p 5
Device (/dev/scull) opened
read: Yash Yagnik
read: Yash Yagnik
read: Yash Yagnik
read: Yash Yagnik
read: Yash Yagnik
read: Yash Yagnik
Device (/dev/scull) closed
yyagnik@DebianCS492:~/shared/492/yyagnik-pa5/src$
```