

```

make[1]: Leaving directory '/home/student/linux-4.9'
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/media/sf_shareddebian/pa3-10445108/driver# rmmod scull
root@debian:/media/sf_shareddebian/pa3-10445108/driver# insmod scull.ko scull_fifo_size=10 scull_fifi_elemsz=3
root@debian:/media/sf_shareddebian/pa3-10445108/driver# cd ../src/
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 2
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: 3, Chr
read: 3, Chr
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# make
cc -O2 -Wall -I../driver consumer.c -o consumer
root@debian:/media/sf_shareddebian/pa3-10445108/src# cd ../driver/
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init stop
Unloading scull.
root@debian:/media/sf_shareddebian/pa3-10445108/driver# make
make -C /lib/modules/4.9.0/build M=/media/sf_shareddebian/pa3-10445108/driver modules
make[1]: Entering directory '/home/student/linux-4.9'
Building modules, stage 2.
MODPOST 1 modules
make[1]: Leaving directory '/home/student/linux-4.9'
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/media/sf_shareddebian/pa3-10445108/driver# rmmod scull
root@debian:/media/sf_shareddebian/pa3-10445108/driver# insmod scull.ko scull_fifo_size=10 scull_fifi_elemsz=3
root@debian:/media/sf_shareddebian/pa3-10445108/driver# cd ../src/
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 2
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: Chr
read: Chr
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src#

```

Workspace 1 13 Apr, Wed 20:00:04

Bash

Bash

D Part 1

I pledge my honor that I have abided by the Stevens Honor System.
Christian Szablewski-Paz

```

/media/sf_shareddebian/pa3-10445108/driver/scull.c:155:2: warning: ISO C90 forbids mixed declarations and code [-Wdeclaration-after-statement]
void *a = arr;

/media/sf_shareddebian/pa3-10445108/driver/scull.c:160:2: warning: ISO C90 forbids mixed declarations and code [-Wdeclaration-after-statement]
size_t *len = (size_t *)a;

/media/sf_shareddebian/pa3-10445108/driver/scull.c:164:2: warning: ISO C90 forbids mixed declarations and code [-Wdeclaration-after-statement]
char *str = (char *)a;

In file included from ./include/linux/printk.h:6:0,
                 from ./include/linux/kernel.h:13,
                 from ./include/linux/list.h:8,
                 from ./include/linux/module.h:9,
                 from ./media/sf_shareddebian/pa3-10445108/driver/scull.c:17:
./include/linux/kern_levels.h:4:18: warning: format '%d' expects argument of type 'int', but argument 2 has type 'size_t * {aka long unsigned int *}' [-Wformat=]
#define KERN_SOH "\001" /* ASCII Start Of Header */
                  ^

./include/linux/kern_levels.h:8:20: note: in expansion of macro 'KERN_SOH'
#define KERN_ALERT KERN_SOH "1" /* action must be taken immediately */
                   ^

./include/linux/printk.h:273:9: note: in expansion of macro 'KERN_ALERT'
printk(KERN_ALERT pr_fmt(fmt), ##_VA_ARGS__)
       ^

/media/sf_shareddebian/pa3-10445108/driver/scull.c:184:2: note: in expansion of macro 'pr_alert'
pr_alert("Len %d\n", len);
pr_alert
~~~~~

Building modules, stage 2.
MODPOST 1 modules
LD [M] /media/sf_shareddebian/pa3-10445108/driver/scull.ko
make[1]: Leaving directory '/home/student/linux-4.9'
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
-
root@debian:/media/sf_shareddebian/pa3-10445108/driver# cd ../src/
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 2
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src#

```


Workspace 1 13 Apr, Wed 20:04:54

Bash

Bash

Debian - OS SIT [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

You have the **Auto capture keyboard** option turned on. This will cause the Virtual Machine to automatically **capture** the keyboard every time the VM window is activated and make it unavailable to other applications running on your host machine: when the keyboard is captured, all keystrokes (including system ones like )

```
./include/linux/printk.h:273:9: note: in expansion of macro 'KERN_ALERT'
  printk(KERN_ALERT pr_fmt(fmt), ##__VA_ARGS__)
  ~~~~~^
./media/sf_shareddebian/pa3-10445108/driver/scull.c:184:2: note: in expansion of macro 'pr_alert'
  pr_alert("Len %d\n", len);
  ~~~~~^

Building modules, stage 2.
MODPOST 1 modules
LD [M] /media/sf_shareddebian/pa3-10445108/driver/scull.ko
make[1]: Leaving directory '/home/student/linux-4.9'
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
root@debian:/media/sf_shareddebian/pa3-10445108/driver# cd ../src/
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 2
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# cd ../driver/
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init stop
Unloading scull.
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
root@debian:/media/sf_shareddebian/pa3-10445108/driver# cd ../src/
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 5
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src#
```

Workspace 1 13 Apr, Wed 20:07:16 Bash Bash

Right Ctrl

D Part 3



```

Bash
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# cd ../driver/
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init stop
Unloading scull.
root@debian:/media/sf_shareddebian/pa3-10445108/driver# ./scull.init start
Loading scull (loading file ./scull.ko)
+
root@debian:/media/sf_shareddebian/pa3-10445108/driver# cd ../src/
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 5
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 2
Device (/dev/scull) opened
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./producer p 5
Device (/dev/scull) opened
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
write: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src# ./consumer p 5
Device (/dev/scull) opened
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
read: Christian Szablewski-Paz
Device (/dev/scull) closed
root@debian:/media/sf_shareddebian/pa3-10445108/src#

```

Workspace 1 13 Apr, Wed 20:08:17

Bash

Bash

D Part 4

Note, I needed to actually redefine the variables inside of the driver header file everytime the scull fifo size changed as well as the `scull_fifo_elemsz` in the `insmod` input.