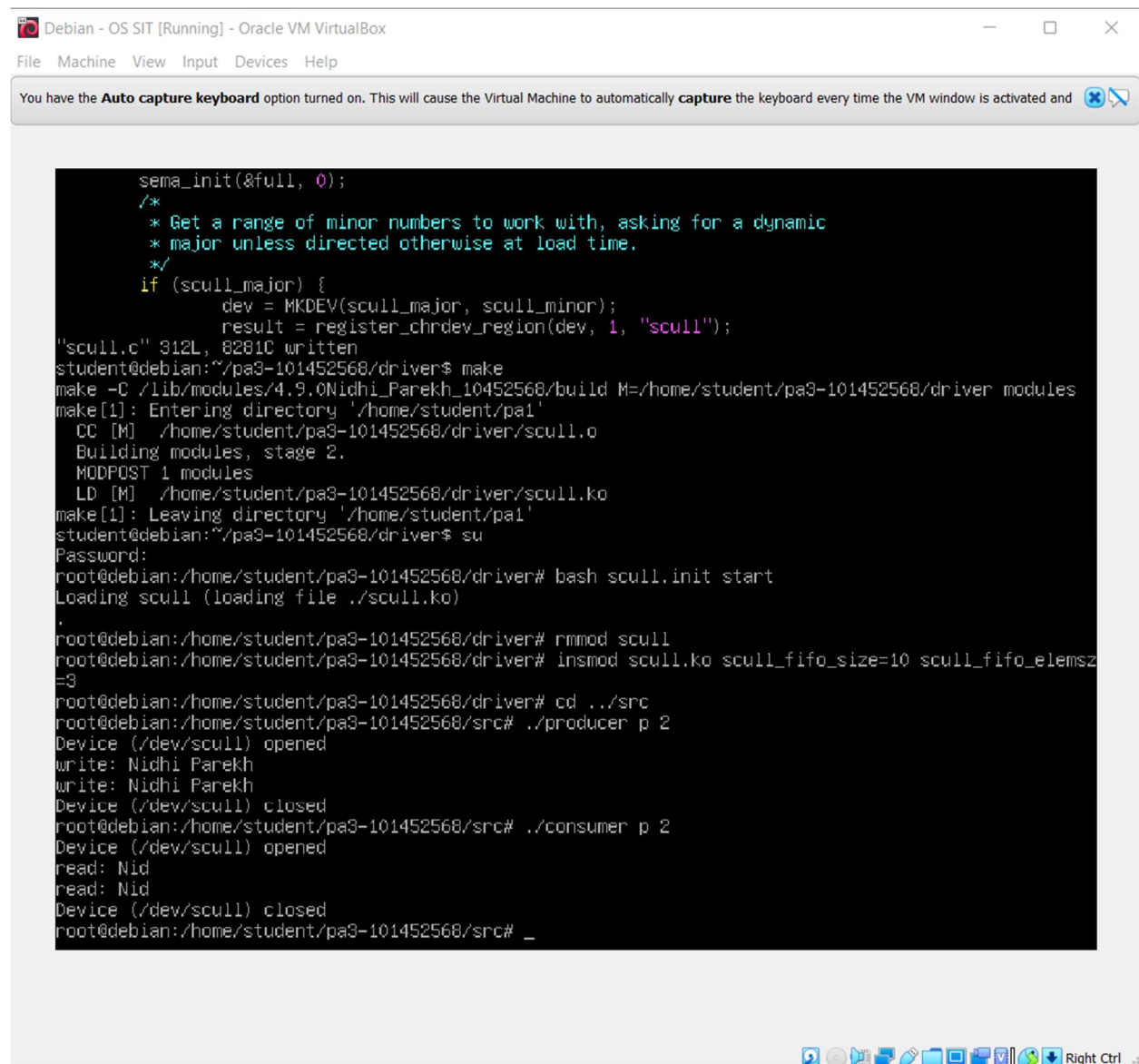


NIDHI PAREKH

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

D.1) # insmod scull.ko scull_fifo_size=10 scull_fifo_elemsz=3



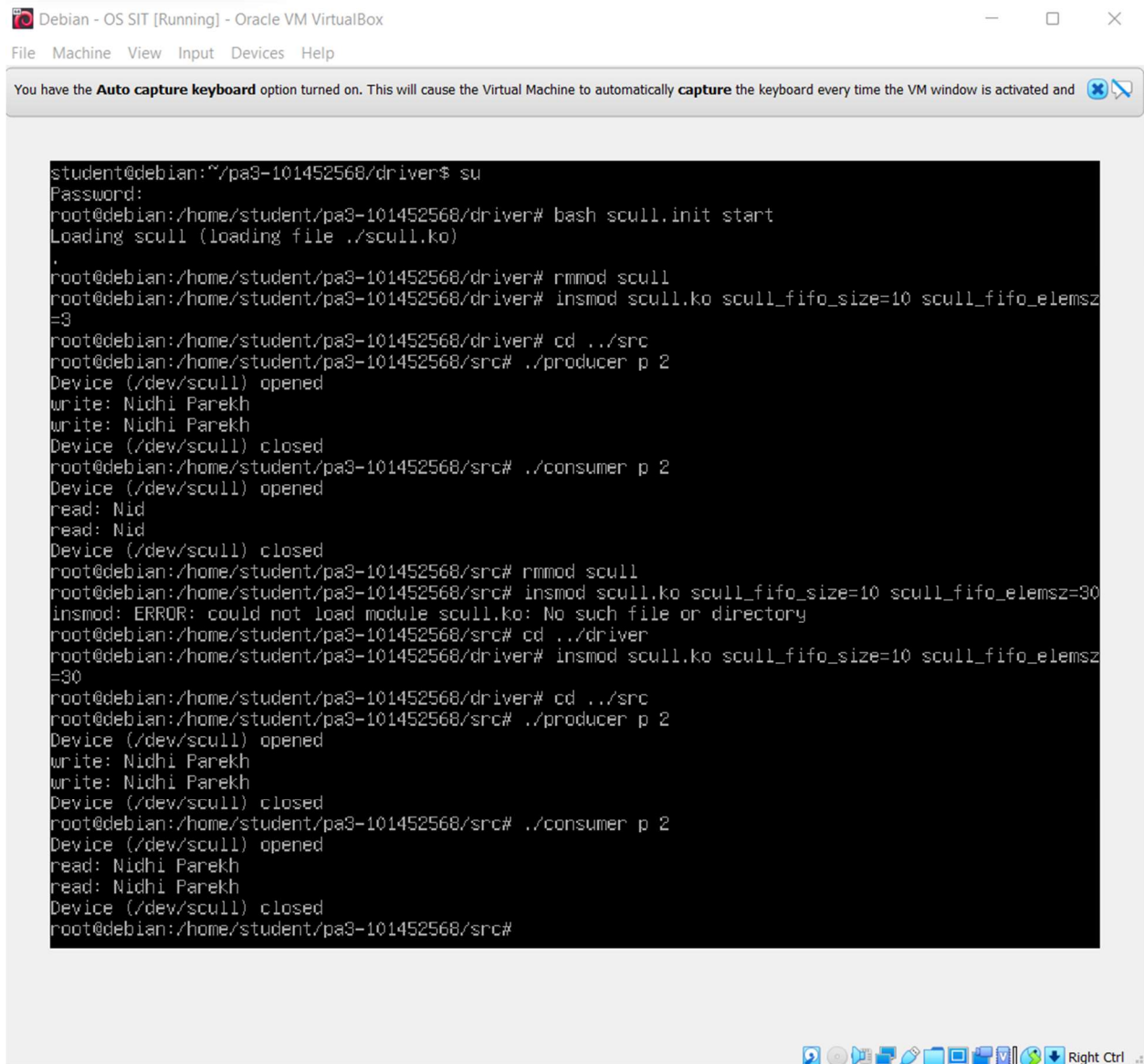
```
Debian - OS SIT [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
You have the Auto capture keyboard option turned on. This will cause the Virtual Machine to automatically capture the keyboard every time the VM window is activated and

sema_init(&full, 0);
/*
 * Get a range of minor numbers to work with, asking for a dynamic
 * major unless directed otherwise at load time.
 */
if (scull_major) {
    dev = MKDEV(scull_major, scull_minor);
    result = register_chrdev_region(dev, 1, "scull");
}
"scull.c" 312L, 8281C written
student@debian:~/pa3-101452568/driver$ make
make -C /lib/modules/4.9.0Nidhi_Parekh_10452568/build M=/home/student/pa3-101452568/driver modules
make[1]: Entering directory '/home/student/pa1'
  CC [M] /home/student/pa3-101452568/driver/scull.o
  Building modules, stage 2.
  MODPOST 1 modules
  LD [M] /home/student/pa3-101452568/driver/scull.ko
make[1]: Leaving directory '/home/student/pa1'
student@debian:~/pa3-101452568/driver$ su
Password:
root@debian:/home/student/pa3-101452568/driver# bash scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/home/student/pa3-101452568/driver# rmmod scull
root@debian:/home/student/pa3-101452568/driver# insmod scull.ko scull_fifo_size=10 scull_fifo_elemsz=3
root@debian:/home/student/pa3-101452568/driver# cd ../src
root@debian:/home/student/pa3-101452568/src# ./producer p 2
Device (/dev/scull) opened
write: Nidhi Parekh
write: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# ./consumer p 2
Device (/dev/scull) opened
read: Nid
read: Nid
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# _
```

NIDHI PAREKH

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

D.2) # insmod scull.ko scull_fifo_size=10 scull_fifo_elemsz=30



The screenshot shows a terminal window titled "Debian - OS SIT [Running] - Oracle VM VirtualBox". The terminal output is as follows:

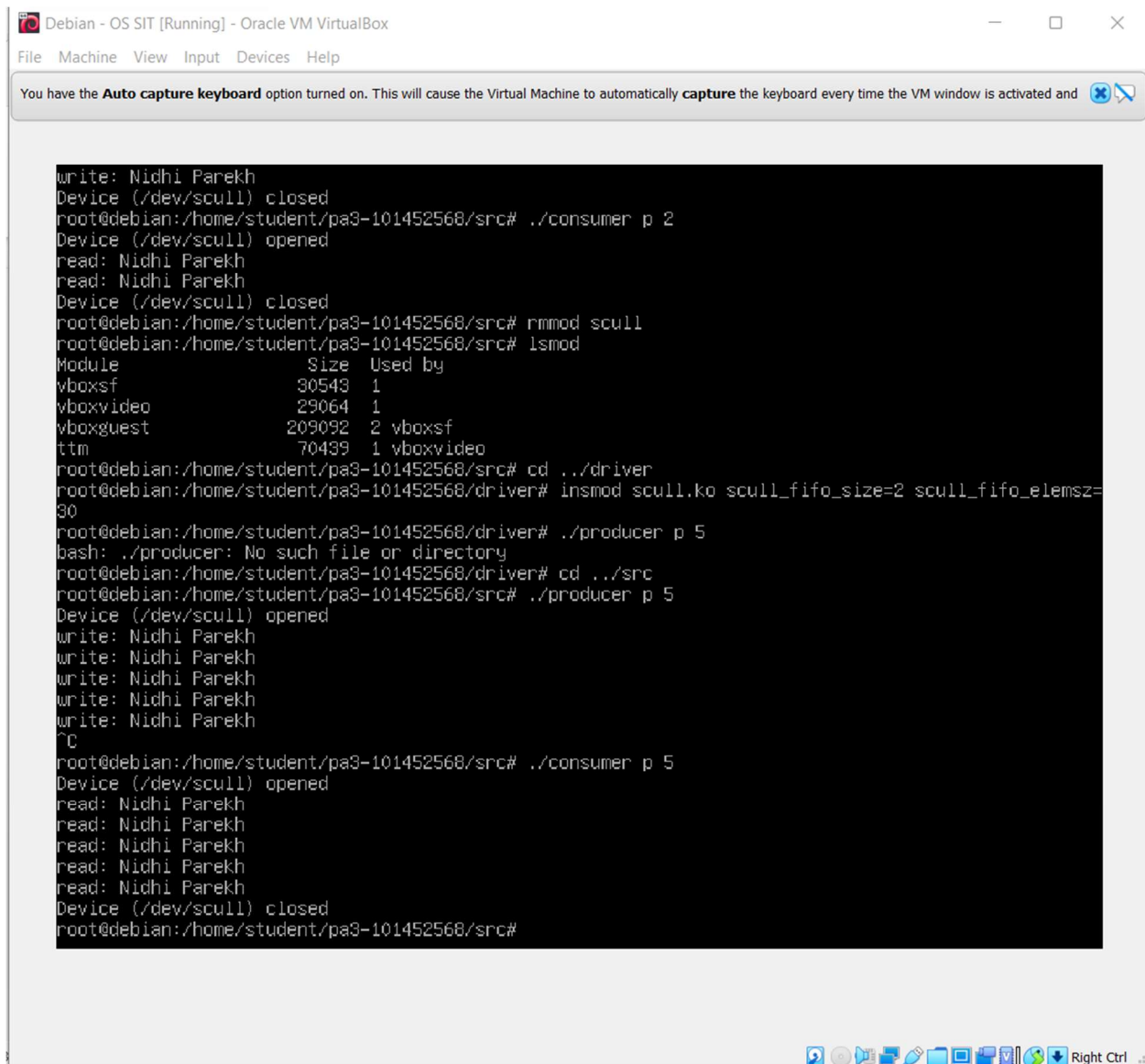
```
student@debian:~/pa3-101452568/driver$ su
Password:
root@debian:/home/student/pa3-101452568/driver# bash scull.init start
Loading scull (loading file ./scull.ko)
.
root@debian:/home/student/pa3-101452568/driver# rmmod scull
root@debian:/home/student/pa3-101452568/driver# insmod scull.ko scull_fifo_size=10 scull_fifo_elemsz=30
root@debian:/home/student/pa3-101452568/driver# cd ../src
root@debian:/home/student/pa3-101452568/src# ./producer p 2
Device (/dev/scull) opened
write: Nidhi Parekh
write: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# ./consumer p 2
Device (/dev/scull) opened
read: Nid
read: Nid
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# rmmod scull
root@debian:/home/student/pa3-101452568/src# insmod scull.ko scull_fifo_size=10 scull_fifo_elemsz=30
insmod: ERROR: could not load module scull.ko: No such file or directory
root@debian:/home/student/pa3-101452568/src# cd ../driver
root@debian:/home/student/pa3-101452568/driver# insmod scull.ko scull_fifo_size=10 scull_fifo_elemsz=30
root@debian:/home/student/pa3-101452568/driver# cd ../src
root@debian:/home/student/pa3-101452568/src# ./producer p 2
Device (/dev/scull) opened
write: Nidhi Parekh
write: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# ./consumer p 2
Device (/dev/scull) opened
read: Nidhi Parekh
read: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src#
```

The window includes a menu bar (File, Machine, View, Input, Devices, Help) and a status bar at the bottom with system icons and a "Right Ctrl" indicator.

NIDHI PAREKH

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D.3) # insmod scull.ko scull_fifo_size=2 scull_fifo_elemsz=30



The screenshot shows a terminal window titled "Debian - OS SIT [Running] - Oracle VM VirtualBox". The terminal output is as follows:

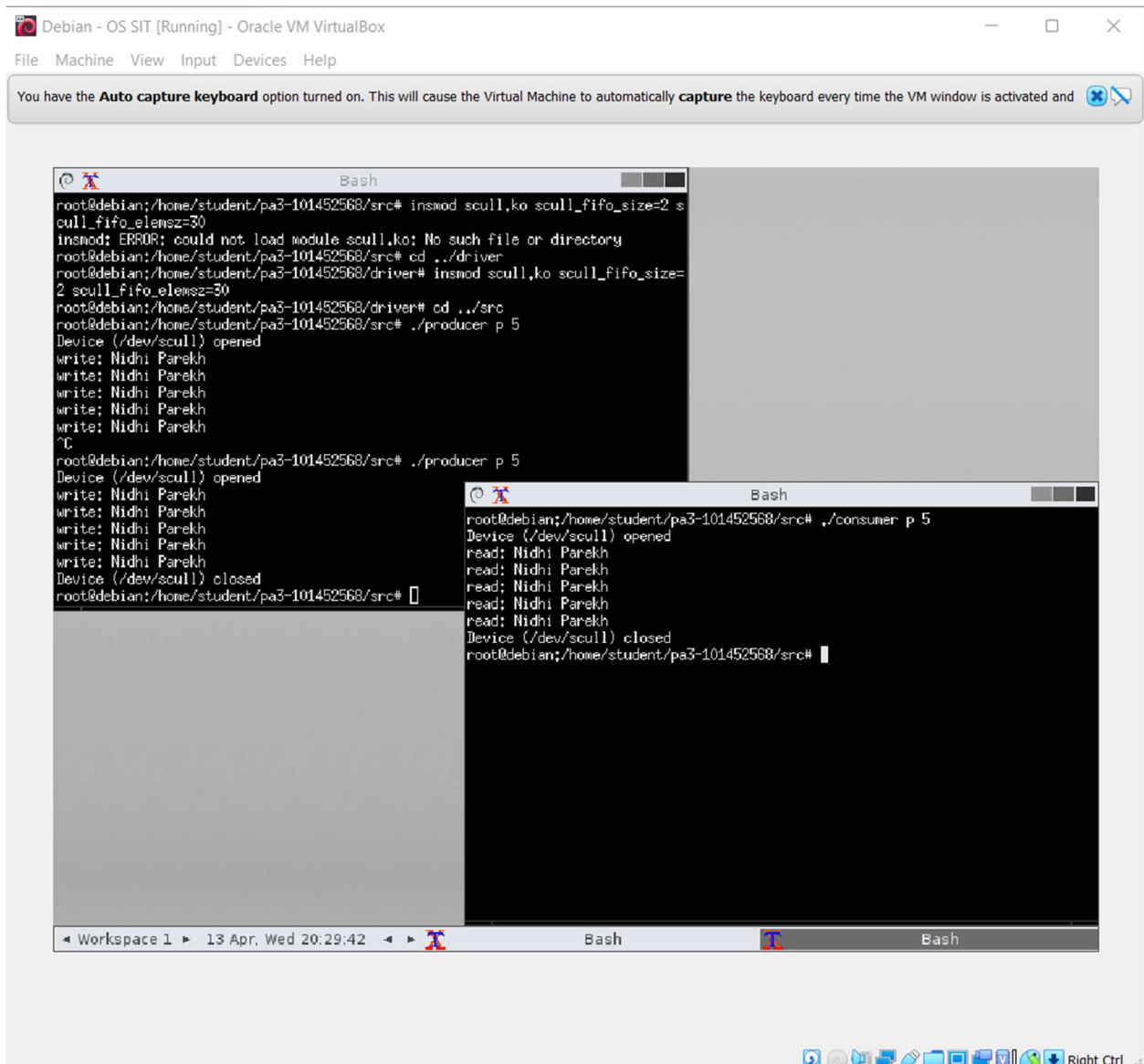
```
write: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# ./consumer p 2
Device (/dev/scull) opened
read: Nidhi Parekh
read: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src# rmmod scull
root@debian:/home/student/pa3-101452568/src# lsmod
Module                Size  Used by
vboxsf                 30543  1
vboxvideo              29064  1
vboxguest             209092  2 vboxsf
ttm                    70439  1 vboxvideo
root@debian:/home/student/pa3-101452568/src# cd ../driver
root@debian:/home/student/pa3-101452568/driver# insmod scull.ko scull_fifo_size=2 scull_fifo_elemsz=30
root@debian:/home/student/pa3-101452568/driver# ./producer p 5
bash: ./producer: No such file or directory
root@debian:/home/student/pa3-101452568/driver# cd ../src
root@debian:/home/student/pa3-101452568/src# ./producer p 5
Device (/dev/scull) opened
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
^C
root@debian:/home/student/pa3-101452568/src# ./consumer p 5
Device (/dev/scull) opened
read: Nidhi Parekh
read: Nidhi Parekh
read: Nidhi Parekh
read: Nidhi Parekh
read: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src#
```

The window includes a menu bar (File, Machine, View, Input, Devices, Help) and a status bar at the bottom with system icons and a "Right Ctrl" indicator.

NIDHI PAREKH

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

D.4) # insmod scull.ko scull_fifo_size=2 scull_fifo_elemsz=30



```
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

Bash
root@debian:/home/student/pa3-101452568/src# insmod scull.ko scull_fifo_size=2 s
cull_fifo_elemsz=30
insmod: ERROR: could not load module scull.ko: No such file or directory
root@debian:/home/student/pa3-101452568/src# cd ../driver
root@debian:/home/student/pa3-101452568/src# insmod scull.ko scull_fifo_size=
2 scull_fifo_elemsz=30
root@debian:/home/student/pa3-101452568/src# cd ../src
root@debian:/home/student/pa3-101452568/src# ./producer p 5
Device (/dev/scull) opened
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
^C
root@debian:/home/student/pa3-101452568/src# ./producer p 5
Device (/dev/scull) opened
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
write: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src#

Bash
root@debian:/home/student/pa3-101452568/src# ./consumer p 5
Device (/dev/scull) opened
read: Nidhi Parekh
read: Nidhi Parekh
read: Nidhi Parekh
read: Nidhi Parekh
read: Nidhi Parekh
Device (/dev/scull) closed
root@debian:/home/student/pa3-101452568/src#
```