John Schneiderhan

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

Part E: Result of ./scull i

Part F1: Loading module, Running ./scull i (2x), Unloading module

```
Debian - OS SIT [Running] - Oracle VM VirtualBox
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver#
root@debian:/home/student/pa2-10445111/driver# insmod ./scull.ko
root@debian:/home/student/pa2-10445111/driver# ./scull.init restart
Reloading scull (loading file ./scull.ko)
.
root@debian:/home/student/pa2-10445111/driver# exit
exit
student@debian:~/pa2-10445111/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffad5680554000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 3578, tgid 3
578, nv 0, niv 1
Device (/dev/scull) closed
student@debian:~/pa2-10445111/src$ ./scull i
Device (/dev/scull) opened
state 0, stack 0xffffad5680554000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 3579, tgid 3
579, nv 0, niv 2
Device (/dev/scull) closed
student@debian:~/pa2-10445111/src$ su
Password:
root@debian:/home/student/pa2-10445111/src# cd ..
root@debian:/home/student/pa2-10445111# cd driver
root@debian:/home/student/pa2-10445111/driver# rmmod scull
root@debian:/home/student/pa2-10445111/driver# dmesg | tail -6
[ 1856.028229] scull open
[ 1856.040692] scull close
[ 1857.863661] scull open
[ 1857.886554] scull close
[ 1868.456070] Task: 0, PID 3578, TGID 3578
[ 1868.456071] Task: 1, PID 3579, TGID 3579
root@debian:/home/student/pa2-10445111/driver# _
```

Part F2: Kernel log of linked list


```
Debian - OS SIT [Running] - Oracle VM VirtualBox
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src# ./scull p
Device (/dev/scull) opened
state 0, stack 0xffff9d71c4684000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9434, tgid 9
434, nv 0, niv 0
state 0, stack 0xffff9d71c469c000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9437, tgid 9
437, nv 0, niv 0
state 0, stack 0xffff9d71c469c000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9437, tgid 9
437, nv 0, niv 1
state 0, stack 0xffff9d71c4684000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9434, tgid 9
434, nv 0, niv 0
state 0, stack 0xffff9d71c4694000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9436, tgid 9
436, nv 0, niv 0
state 0, stack 0xffff9d71c468c000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9435, tgid 9
435, nv 0, niv 0
state 0, stack 0xffff9d71c4694000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9436, tgid 9
436, nv 1, niv 1
state 0, stack 0xffff9d71c468c000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9435, tgid 9
435, nv 1, niv 1
Device (/dev/scull) closed
root@debian:/home/student/pa2-10445111/src# _
```

Part G1.1: Running of ./scull p

```
Debian - OS SIT [Running] - Oracle VM VirtualBox
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src# ./scull p
Device (/dev/scull) opened
state 0, stack 0xffff9d71c4684000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9434, tgid 9
434, nv 0, niv 0
state 0, stack 0xffff9d71c469c000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9437, tgid 9
437, nv 0, niv 0
state 0, stack 0xffff9d71c469c000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9437, tgid 9
437, nv 0, niv 1
state 0, stack 0xffff9d71c4684000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9434, tgid 9
434, nv 0, niv 0
state 0, stack 0xffff9d71c4694000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9436, tgid 9
436, nv 0, niv 0
state 0, stack 0xffff9d71c468c000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9435, tgid 9
435, nv 0, niv 0
state 0, stack 0xffff9d71c4694000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9436, tgid 9
436, nv 1, niv 1
state 0, stack 0xffff9d71c468c000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9435, tgid 9
435, nv 1, niv 1
Device (/dev/scull) closed
root@debian:/home/student/pa2-10445111/src# dmesg | tail -6
[20331.441319] scull open
[20331.572260] scull close
[20389.168028] scull open
[20389.324193] scull close
[20541.964987] scull open
[20542.044081] scull close
root@debian:/home/student/pa2-10445111/src#
```

Part G1.2: Kernel log of ./scull p

```
Debian - OS SIT [Running] - Oracle VM VirtualBox
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src# ./scull t
Device (/dev/scull) opened
state 0, stack 0xffff9d71c46bc000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9444, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46bc000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9444, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46a4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9441, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46ac000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9442, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46b4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9443, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46a4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9441, tgid 9
440, nv 1, niv 0
state 0, stack 0xffff9d71c46ac000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9442, tgid 9
440, nv 1, niv 0
state 0, stack 0xffff9d71c46b4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9443, tgid 9
440, nv 2, niv 0
ioctl: Success
Device (/dev/scull) closed
root@debian:/home/student/pa2-10445111/src# _
```

Part G2.1: Running of ./scull t

```
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src#
root@debian:/home/student/pa2-10445111/src# ./scull t
Device (/dev/scull) opened
state 0, stack 0xffff9d71c46bc000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9444, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46bc000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9444, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46a4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9441, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46ac000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9442, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46b4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9443, tgid 9
440, nv 0, niv 0
state 0, stack 0xffff9d71c46a4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9441, tgid 9
440, nv 1, niv 0
state 0, stack 0xffff9d71c46ac000, cpu 0, prio 120, sprio 120, nprio 120, rtprio 0, pid 9442, tgid 9
440, nv 1, niv 0
state 0, stack 0xffff9d71c46b4000, cpu 1, prio 120, sprio 120, nprio 120, rtprio 0, pid 9443, tgid 9
440, nv 2, niv 0
ioctl: Success
Device (/dev/scull) closed
root@debian:/home/student/pa2-10445111/src# dmesg | tail -6
[20389.168028] scull open
[20389.324193] scull close
[20541.964987] scull open
[20542.044081] scull close
[20613.375619] scull open
[20613.487682] scull close
root@debian:/home/student/pa2-10445111/src#
```

Part G2.2: Kernel log of ./scull t