1) write an ioch command to sent the first quantum of the first scullder in scull device (modify main.c).

Solut

In scull.h., 1990 4 (14/0) alob - b(14/0) 4

define SCULL_IOC SONTERSTQUANTUM _IO (SEULL_IOC_MAGIC,
15);
int -> int *

In use-scull.h, same as scull.h.

In use semaphore.c,

we are not reading (naiting to device and hence comment others and uncomment only iooth both (fd, scull-tocsortfirstquartum)

In main.c, struct seul-der & d = flip ->private data;

if (1d)

goto out;

if (!d -> data)
goto out;

if (!d → data → data)
goto out;

if (!d → olāla → olala [0])
goto ont;

for (i=0; ix scull-quantum -1; itt) . Boi no stire (for (j=0;j < scill_quantum; j++) was sont for if (*((char *) d -> data -> data[v]+i); * ((char +)d -> data -> data [o]+i) = * ((char *)d -> olata AM SOL 110 52) OT MULMAURIZARTOSOZ DO data (0] +j); * ((char *) d -> data -> data(o]+j) = lemp; * him doi 3 main-e out: use semaphore.c Great & Scull. & Hosi who dimensions one order cise scull. h SCOLL TOO SOLLHESTELLANTAN haloving - dill - b * vabilities fruits - sinion ne Commands :make clean make sudo sh scull-logd writing to scullo sudo cat main.c > /der/scullo Sudo cot /der/sculto // head scull o. use _semaphore.c sudo. 10.out > what do you want o press + for reading or i for Local : i CTITE ; then sudo col (der/scullo

write an ideal command to sort the nth quantum of first d. levos of wol of define sevil IOC CHAP POINTERS In use_semaphore.c, Each (to, Scull-EOCSORTHOWANTOM, &K); K=3; to sort the 4th quantum. (0 to 3) D. martenez - 1984 16 icetil (fd, court - 200 SMATPORMIERS) it lung 14 # define SCULL_ LOCSORTM QUANTUM - ZOR (SCULL- IOC-MAGK, shinet scull der & d = file - pairate -date; CORE SCRIFF DECEMBROTATERS: In ase-sculled, (10!) \$ same as scull.h. if (10 -> data) In mainer, Stond scull derk d = filp - frate-data; case Scull 200 sorth quantum: if (!d) (10) state what to 1) \$ goto out; to dop if (!d->data) stabe etab es b 1) fi goto out; two stop if (!d -> data -> data) goto contito - data - b = five Jours 1) [] // _get-user (n, (int _ user *) arg); if (Id -> olate -> deta (N)) · stopic goto out; for loop -> sneap legic

Implement an joeth command to change the first and second pointers in the first sculder of the scul delerce -iwa2 In soull-b. # define SCULL_IOCSWAP ADINTERS -IO (SCULL JOC_MAGIC, 15) In sacher scull-h same as scull-h. In wer-sengthere.a, "noct! (fd, scull - DOCSWAPPOINTERS); In main.c., struct scull-der * d = flip - poivate -date; case Scull-locswap pointers: if (| d) goto out; if (!d -> data) an mainer start scull dert of = Payton of Quale - data: if (!ol -> data -> olata) cose scall receptional in alog if (! d - data - data (01) Total court; gots out; if (! dr> data -> data (1)) goto out; if (Id - state - of other temp = d -> data -> data [1]; 11swap d → data → data[1] = d → data → data [0]; d -> data -> data [0] = temp; break; goto out;

to loop - ever legic

A) Display the first so characters of the first quantum of each of the 4 scull devotoes using proc fitesystem Shir there, we have to write en to from filesystem Inside scull-read-procumen (struct seq-file *s, wid *v) struct sent dev & d = & sent devices (i); int limit = s - size 280; org stand-lenos abient for (1=0; 1 < scull nr-ders les > count < limit; struct seul der &d = & scull devoices (i) if (muter_lock_interprotable (kd -> muter)) and and seltin - ERESTARTSYS; seq-printf(s, "Indeusce "i: " 1990-lluse de obre if (!d) as previous solved of goto, out; use (solved of colors) of (!(d) -data)) goto out; or dring third loord too ohus if (!d - data - data) if (! (d -> olata -> data(0)) goto out;

for cjeolijicon 144) Electron or trif at polycia (A seq-printf (s,"/c", " (cchar *) (d -> data -> data(o]+j))} out: muter urlock (& scull devices [7]. muter); return of rust such as of the valo tens truste Inside schul-create proc Quoid , = 2 = divid dri poc_create-data ("print-first-50-char", o Strink Level der 4 d = 1 soull dersteeslis (2bnamas) if (make clean to de interprétable (led - muter répair de nake terestaristics sudo sh scull-bod sudo first-so-char sudo/proc/scullo I franks nothing. sudo cot main.a > /der/scullo. Morto to sudo cat froctprint-first so-char points first so chancelers of main a. if ((d - data - data())) gots out;

PROBLEM 1,2,3:

make clean

make

sudo sh scull_load

sudo cat main.c > /dev/scull0

sudo cat /dev/scull0

gcc use_semaphore.c

sudo ./a.out

sudo cat /dev/scull0

PROBLEM 4:

make

sudo sh scull_load

cat /proc/print_first_50_char

echo hello >/dev/scull0

cat /proc/print_first_50_char

PROBLEM 5:

make

sudo sh scull_load

cat /proc/print_last_50_char

echo hello >/dev/scull0

cat /proc/print_ last _50_char