Question 1)

insmod helloworld.ko

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lsmod

Module Size Used by

helloworld 16384 0

rfcomm 65536 12

bnep 20480 2

coretemp 16384 0

[….]

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rmmod helloworld.ko

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dmesg

[…]

[80478.472492] Hello world!

[80632.398993] Goodbye world!

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Question 2

2) I)

#include <linux/module.h>

#include <linux/init.h>

#include <linux/types.h>

#include <linux/fs.h>

#include <linux/cdev.h>

struct cdev \* p\_vircdev;

dev\_t dev\_num;

int major\_number;

int minor\_number;

#define DEVICE\_NAME "my\_virtual\_device"

#define FIRST\_MINOR 0

#define NB\_MINOR\_ID 1

static int driver\_init(void)

{

int err;

err = alloc\_chrdev\_region(&dev\_num, FIRST\_MINOR, NB\_MINOR\_ID, DEVICE\_NAME);

if (err < 0) {

printk(KERN\_ALERT "%s: failed to obtain device numbers\n", DEVICE\_NAME);

return err;

}

p\_vircdev = cdev\_alloc();

p\_vircdev->owner = THIS\_MODULE;

err = cdev\_add(p\_vircdev, dev\_num, NB\_MINOR\_ID);

major\_number = MAJOR(dev\_num);

minor\_number = MINOR(dev\_num);

if (err < 0) {

printk(KERN\_ALERT "%s: unable to add cdev to kernel\n", DEVICE\_NAME);

return err;

}

printk(KERN\_ALERT "%s: module successfully loaded\n", DEVICE\_NAME);

printk(KERN\_INFO "\tuse \"mknod /dev/%s c %d %d\" for device file", DEVICE\_NAME, major\_number, minor\_number);

return 0;

}

static void driver\_cleanup(void)

{

unregister\_chrdev\_region(dev\_num, NB\_MINOR\_ID);

cdev\_del(p\_vircdev);

printk(KERN\_ALERT "Module %s successfully unloaded\n", DEVICE\_NAME);

}

module\_init(driver\_init);

module\_exit(driver\_cleanup);

2) ii)

insmod reg\_driver.ko

dmesg

[...]

[ 79.511247] my\_virtual\_device: module successfully loaded

[ 79.511250] use "mknod /dev/my\_virtual\_device c 246 0" for device file

rmmod reg\_driver

dmesg

[...]

[ 120.315371] Module my\_virtual\_device successfully unloaded

2) iii)

cat /proc/devices

Character devices:

[...]

226 drm

246 my\_virtual\_device

247 hidraw

248 aux

[...]

2) iv)

Ajout des droits a tous les utilistaeurs avec chmod:

chmod a=rwx /dev/my\_virtual\_device

ls -l /dev/my\_virtual\_device

crwxrwxrwx 1 root root 246, 0 Apr 27 15:34 /dev/my\_virtual\_device