

## Lab 2 4AA4

**Jeff Suitor 400138679**

**Justin Palombo 400122373**

### Part 1

```
admin@NI-myRIO-1900-03087851:~/jeff_and_justin/km/hello# cat hello.c
#include <linux/module.h>
#include <linux/kernel.h>

int init_module(void) {
    printk (KERN_INFO "Hello world\n");
    return 0;
}

void cleanup_module(void) {
    printk (KERN_INFO "Goodbye cruel world\n");
}
```

```
inet 130.113.11.24/16 brd 130.113.255.255 scope global wlan0
[ 1031.442875] Hello world
[ 1031.451553] Goodbye cruel world
```

## Part 2

```
admin@NI-myRIO-1900-03087851:~/jeff_and_justin/km/hello2# cat hello2.c
#include <linux/module.h>      /* Needed by all modules */
#include <linux/kernel.h>      /* Needed for KERN_INFO */
#include <linux/init.h>        /* Needed for the macros */

static int hello_2_data __initdata = 2;

static int __init hello_2_init(void) {
    printk(KERN_INFO "Hello dummy world number %d\n", hello_2_data);
    return 0;
}

static void __exit hello_2_exit(void) {
    printk(KERN_INFO "Goodbye cruel world %d\n", hello_2_data);
}

module_init(hello_2_init);
module_exit(hello_2_exit);
```

```
[      inet 130.113.11.24/16 brd 130.113.255.255 scope global wlan0
[ 88.986897] Hello dummy world number 2
[ 88.993850] Goodbye cruel world 2
```

## Part 3

```
admin@NI-myRIO-1900-03087851:~/jeff_and_justin/km/hello3# cat hello3.c
#include <linux/module.h>      /* Needed by all modules */
#include <linux/kernel.h>     /* Needed for KERN_INFO */
#include <linux/init.h>       /* Needed for the macros */

#define DRIVER_AUTHOR "Jeff Suitor & Justin Palombo"
#define DRIVER_DESC "Lab 2 Hello Module 3"

static int hello_3_data __initdata = 3;

static int __init hello_3_init(void) {
    printk(KERN_INFO "Hello dummy world number %d\n", hello_3_data);
    return 0;
}

static void __exit hello_3_exit(void) {
    printk(KERN_INFO "Goodbye cruel world %d\n", hello_3_data);
}

module_init(hello_3_init);
module_exit(hello_3_exit);

MODULE_AUTHOR(DRIVER_AUTHOR);
MODULE_DESCRIPTION(DRIVER_DESC);
MODULE_LICENSE("GPL");
```

```
filename:      /home/admin/jeff_and_justin/km/hello3/hello3.ko
license:       GPL
description:    Lab 2 Hello Module 3
author:        Jeff Suitor & Justin Palombo
depends:
vermagic:      4.1.15-rt17-ni-4.0.0f1 SMP preempt mod_unload modversions ARMv7 p2v8
               inet 130.113.11.24/16 brd 130.113.255.255 scope global wlan0
[ 544.985954] Hello dummy world number 3
[ 545.005019] Goodbye cruel world 3
```

## Part 4

```
#include <linux/module.h>      /* Needed by all modules */
#include <linux/kernel.h>      /* Needed for KERN_INFO */
#include <linux/init.h>        /* Needed for the macros */

#define DRIVER_AUTHOR "Jeff Suitor & Justin Palombo"
#define DRIVER_DESC "Lab 2 Hello Module 4"

static char *my_string = "dummy";
module_param(my_string, charp, 0000);
MODULE_PARM_DESC(my_string, "A character string");

static int my_int = 0;
module_param(my_int, int, S_IRUSR | S_IWUSR | S_IRGRP | S_IROTH);
MODULE_PARM_DESC(my_int, "An int");

static int hello_4_data __initdata = 4;

static int __init hello_4_init(void) {
    printk(KERN_INFO "My int: %d\n", my_int);
    printk(KERN_INFO "My string: %s\n", my_string);
    printk(KERN_INFO "Hello dummy world number %d\n", hello_4_data);
    return 0;
}

static void __exit hello_4_exit(void) {
    printk(KERN_INFO "Goodbye cruel world %d\n", hello_4_data);
}

module_init(hello_4_init);
module_exit(hello_4_exit);

MODULE_AUTHOR(DRIVER_AUTHOR);
MODULE_DESCRIPTION(DRIVER_DESC);
MODULE_LICENSE("GPL");
```

```
filename:      /home/admin/jeff_and_justin/km/hello4/hello4.ko
license:       GPL
description:    Lab 2 Hello Module 4
author:        Jeff Suitor & Justin Palombo
depends:
vermagic:      4.1.15-rt17-ni-4.0.0f1 SMP preempt mod_unload modversions ARMv7 p2v8
parm:          my_string:A character string (charp)
parm:          my_int:An int (int)
No params
[ 1310.053489] Hello dummy world number 4
[ 1310.053479] My string: dummy
[ 1310.053461] My int: 0
[ 1310.068140] Goodbye cruel world 4
string=xyz int=10
[ 1310.177811] Hello dummy world number 4
[ 1310.177801] My string: xyz
[ 1310.177782] My int: 10
[ 1310.184896] Goodbye cruel world 4
string=abc int=20
[ 1310.298503] Hello dummy world number 4
[ 1310.298494] My string: abc
[ 1310.298474] My int: 20
[ 1310.305165] Goodbye cruel world 4
inet 130.113.11.24/16 brd 130.113.255.255 scope global wlan0
```