

DEVICE DRIVERS LAB 3

DONE BY:
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CS20B1057

1)PROGRAM-1

hello_world.c

```
hello_world.c
1 #include<linux/module.h>
2 #include<linux/kernel.h>
3 #include<linux/init.h>
4 MODULE_LICENSE("GPL");
5 MODULE_AUTHOR("DHANUSH");
6 MODULE_DESCRIPTION("HELLO WORLD");
7
8 static int __init hello_init(void)
9 {
10     printk(KERN_INFO"Hello World");
11     return 0;
12 }
13
14 static void __exit hello_cleanup(void)
15 {
16     printk(KERN_INFO"Good Bye.\n");
17 }
18
19 module_init(hello_init);
20 module_exit(hello_cleanup);
21
22
23
24 |
```

Makefile

```
1 obj-m += hello_world.o
2 KDIR = /lib/modules/$(shell uname -r)/build
3
4 all:
5     make -C $(KDIR) M=$(shell pwd) modules
6 clean:
7     make -C $(KDIR) M=$(shell pwd) clean|
```

OUTPUT:

```
user@user:~/cs20b1057_dd_lab$ ls
hello_world.c      hello_world.mod.c  Makefile          xlinx
hello_world.ko      hello_world.mod.o  modules.order
hello_world.mod     hello_world.o      Module.symvers
user@user:~/cs20b1057_dd_lab$ sudo insmod hello_world.ko
user@user:~/cs20b1057_dd_lab$ sudo rmmod hello_world
```

```
user@user: ~/cs20b1057_dd_lab
[ 901.952776] raid6: sse2x1   gen() 14738 MB/s
[ 902.020776] raid6: sse2x1   xor() 7672 MB/s
[ 902.020778] raid6: using algorithm avx512x2 gen() 70850 MB/s
[ 902.020779] raid6: .... xor() 44219 MB/s, rmw enabled
[ 902.020780] raid6: using avx512x2 recovery algorithm
[ 902.121685] xor: automatically using best checksumming function   avx
[ 902.204495] Btrfs loaded, crc32c=crc32c-intel, zoned=yes, fsverity=yes
[ 2527.550197] hello_world: loading out-of-tree module taints kernel.
[ 2527.550226] hello_world: module verification failed: signature and/or required key missing - tainting kernel
[ 2527.551317] Hello World
[ 2855.421014] Good Bye.
[ 3196.480141] audit: type=1400 audit(1674033986.913:51): apparmor="ALLOWED" operation="open" profile="libreoffice-soffice" name="/usr/share/zoneinfo-icu/44/le/zoneinfo64.res" pid=16580 comm="soffice.bin" requested_mask="r" denied_mask="r" fsuid=1000 ouid=0
[ 3196.480252] audit: type=1400 audit(1674033986.913:52): apparmor="ALLOWED" operation="open" profile="libreoffice-soffice" name="/usr/share/zoneinfo-icu/44/le/timezoneTypes.res" pid=16580 comm="soffice.bin" requested_mask="r" denied_mask="r" fsuid=1000 ouid=0
[ 3579.933335] Hello World
[ 3617.980989] Good Bye.
```

2)Ch