

Device Drivers

LAB EXAM

Question 2(b) - Output

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- The module is made using the make command

```
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ make
make -C /lib/modules/4.15.0-70-generic/build M=/home/maria/DeviceDriversLab/LAB_EXAM/Q2_PART_B modules
make[1]: Entering directory '/usr/src/linux-headers-4.15.0-70-generic'
  CC [M]  /home/maria/DeviceDriversLab/LAB_EXAM/Q2_PART_B/q2.o
  Building modules, stage 2.
  MODPOST 1 modules
WARNING: modpost: missing MODULE_LICENSE() in /home/maria/DeviceDriversLab/LAB_EXAM/Q2_PART_B/q2.o
see include/linux/module.h for more information
  CC      /home/maria/DeviceDriversLab/LAB_EXAM/Q2_PART_B/q2.mod.o
  LD [M]  /home/maria/DeviceDriversLab/LAB_EXAM/Q2_PART_B/q2.ko
make[1]: Leaving directory '/usr/src/linux-headers-4.15.0-70-generic'
```

- The module is inserted using the insmod command

```
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ sudo insmod q2.ko
[sudo] password for maria:
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$
```

- The log message is displayed

```
ubuntu: ~/DeviceDriversLab/LAB_EXAM/Q2_PART_B
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ dmesg | tail -1
[15858.307870] Maria Philna Aruja
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ sudo insmod q2.ko
```

- Lsmod command is used to see the inserted module

```
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ lsmod
Module                  Size  Used by
q2                      16384  0
ccm                     20480  3
```

- The module is removed and the log is displayed

```
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ sudo rmmod q2.ko
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$ dmesg | tail -1
[15953.282250] Cleaning up module.
maria@ubuntu:~/DeviceDriversLab/LAB_EXAM/Q2_PART_B$
```