- Compiling using Makefile :

```
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ make
make -C /lib/modules/5.8.0-49-generic/build M=/home/hp/DD/ques2_exam modules
make[1]: Entering directory '/usr/src/linux-headers-5.8.0-49-generic'
  CC [M]  /home/hp/DD/ques2_exam/ques2_parta.o
  MODPOST /home/hp/DD/ques2_exam/Module.symvers
  CC [M]  /home/hp/DD/ques2_exam/ques2_parta.mod.o
  LD [M]  /home/hp/DD/ques2_exam/ques2_parta.ko
make[1]: Leaving directory '/usr/src/linux-headers-5.8.0-49-generic'
```

- Inserting the module using insmod command along with an integer parameter:

```
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ sudo insmod ques2_parta.ko number=49
[sudo] password for hp:
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ lsmod
Module                  Size  Used by
ques2_parta            16384  0
nfnetlink_log          20480  0
```

- Checking if the module is inserted using the lsmod command and the output of the command is shown below :

```
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ lsmod
Module                    Size  Used by
ques2_parta              16384  0
nfnetlink_log            20480  0
nfnetlink                20480  1 nfnetlink_log
btrfs                  1318912  0
blake2b_generic          20480  0
xor                      24576  1 btrfs
raid6_pq                114688  1 btrfs
ufs                      81920  0
qnx4                     16384  0
```

We can see that the ques2_parta module is inserted successfully.

- Next, checking the messages printed in the log file :

```
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ sudo dmesg | tail -3
[18205.975263] Loading the ques2_parta module...
[18205.975263] DD Lab Exam
[18205.975264] The integer entered is = 49
```

The integer parameter 49 given during the insmod is printed by the module in the logfile.

- Removing the module and checking if its removed successfully :

```
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ sudo rmmod ques2_parta.ko
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ sudo dmesg | tail -2
[18860.843804] The integer entered is = 49
[18865.161235] Goodbye...See you later!!
hp@hp-HP-Pavilion-Laptop-15-cc1xx:~/DD/ques2_exam$ lsmod
Module                  Size  Used by
nfnetlink_log          20480  0
nfnetlink              20480  1 nfnetlink_log
btrfs                1318912  0
blake2b_generic        20480  0
xor                    24576  1 btrfs
raid6_pq              114688  1 btrfs
ufs                    81920  0
qnx4                   16384  0
hfsplus               110592  0
hfs                    61440  0
minix                  45056  0
ntfs                  106496  0
msdos                  20480  0
jfs                   196608  0
xfs                  1331200  0
libcrc32c              16384  2 btrfs,xfs
rfcomm                 81920  7
ccm                    20480  3
cmac                   16384  5
```

"Goodbye..See you later !!" message is printed in the log file after the module is removed and we can also see that it is not present when checked with lsmod command.