

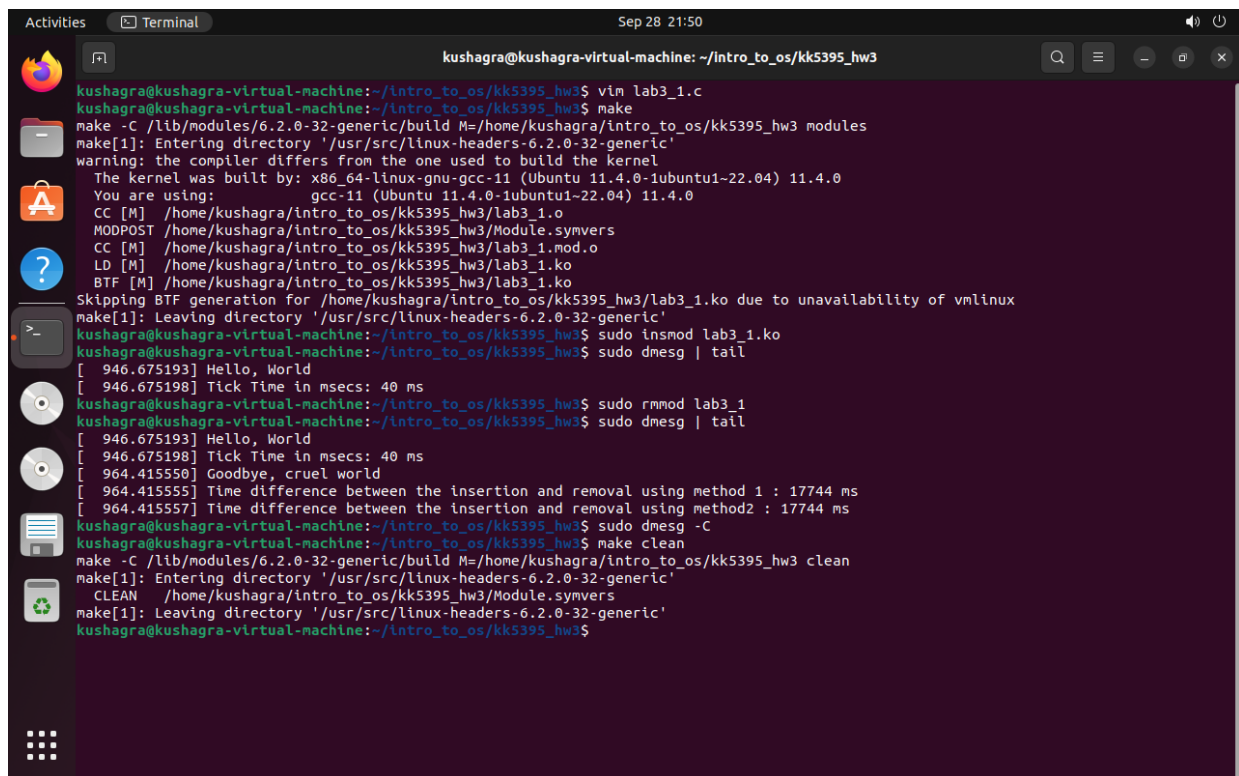
Assignment 3

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Ans 1.

PFA the screenshot displaying the compilation of the code and output of the code.



```
kushagra@kushagra-virtual-machine: ~/Intro_to_os/kk5395_hw3
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ vim lab3_1.c
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ make
make -C /lib/modules/6.2.0-32-generic/build M=/home/kushagra/intro_to_os/kk5395_hw3 modules
make[1]: Entering directory '/usr/src/linux-headers-6.2.0-32-generic'
warning: the compiler differs from the one used to build the kernel
The kernel was built by: x86_64-linux-gnu-gcc-11 (Ubuntu 11.4.0-1ubuntu1~22.04) 11.4.0
You are using:      gcc-11 (Ubuntu 11.4.0-1ubuntu1~22.04) 11.4.0
CC [M] /home/kushagra/intro_to_os/kk5395_hw3/lab3_1.o
MODPOST /home/kushagra/intro_to_os/kk5395_hw3/Module.symvers
CC [M] /home/kushagra/intro_to_os/kk5395_hw3/lab3_1.mod.o
LD [M] /home/kushagra/intro_to_os/kk5395_hw3/lab3_1.ko
BTF [M] /home/kushagra/intro_to_os/kk5395_hw3/lab3_1.ko
Skipping BTF generation for /home/kushagra/intro_to_os/kk5395_hw3/lab3_1.ko due to unavailability of vmlinux
make[1]: Leaving directory '/usr/src/linux-headers-6.2.0-32-generic'
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ sudo insmod lab3_1.ko
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ sudo dmesg | tail
[ 946.675193] Hello, World
[ 946.675198] Tick Time in msecs: 40 ms
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ sudo rmmod lab3_1
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ sudo dmesg | tail
[ 946.675193] Hello, World
[ 946.675198] Tick Time in msecs: 40 ms
[ 964.415550] Goodbye, cruel world
[ 964.415555] Time difference between the insertion and removal using method 1 : 17744 ms
[ 964.415557] Time difference between the insertion and removal using method2 : 17744 ms
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ sudo dmesg -C
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$ make clean
make -C /lib/modules/6.2.0-32-generic/build M=/home/kushagra/intro_to_os/kk5395_hw3 clean
make[1]: Entering directory '/usr/src/linux-headers-6.2.0-32-generic'
CLEAN /home/kushagra/intro_to_os/kk5395_hw3/Module.symvers
make[1]: Leaving directory '/usr/src/linux-headers-6.2.0-32-generic'
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw3$
```

Figure 1: Snapshot