

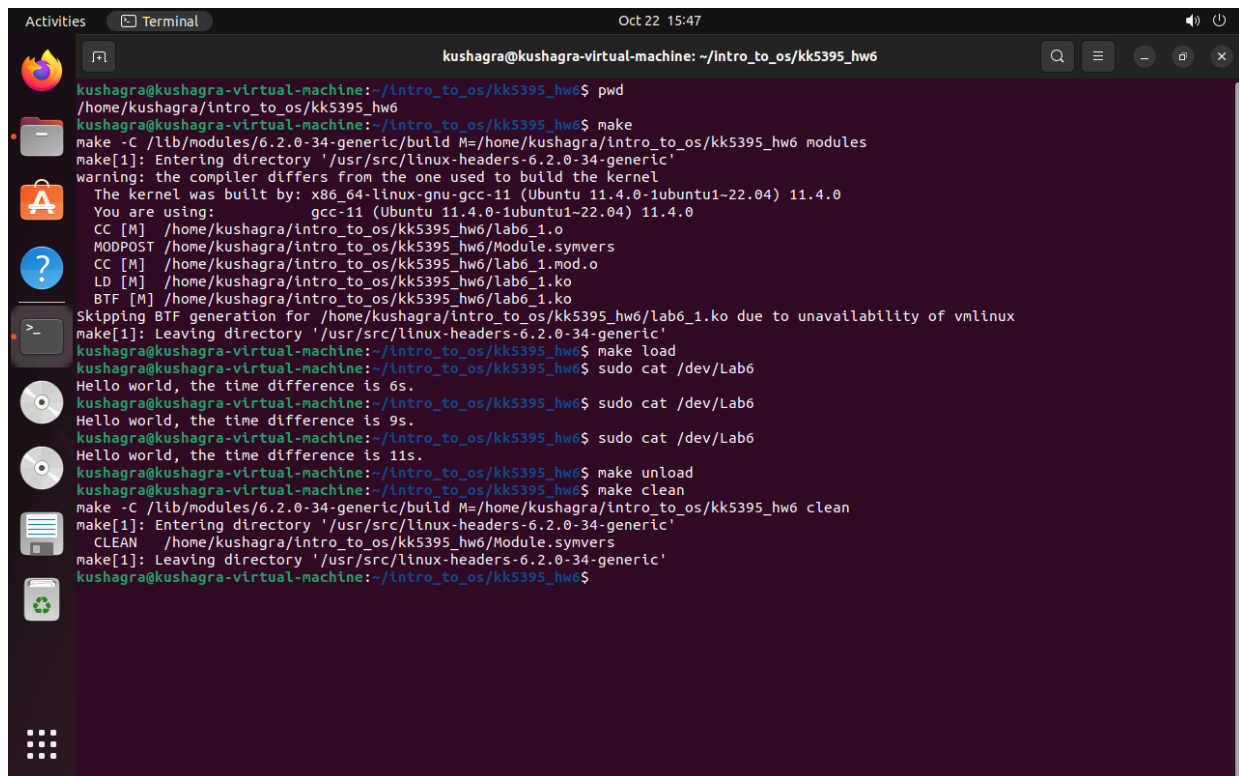
## Assignment 6

10-22-23

Kushagra Khatwani (kk5395)

### Ans A.

In this question we make a dynamically loadable character device and use cat to test out its functionality. Please refer to README for instructions to run the program. Also, PFA screenshot for the output of code.



```
kushagra@kushagra-virtual-machine: ~/Intro_to_os/kk5395_hw6
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ pwd
/home/kushagra/intro_to_os/kk5395_hw6
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ make
make -C /lib/modules/6.2.0-34-generic/build M=/home/kushagra/intro_to_os/kk5395_hw6 modules
make[1]: Entering directory '/usr/src/linux-headers-6.2.0-34-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_hw6/lab6_1.o
MODPOST /home/kushagra/intro_to_os/kk5395_hw6/Module.symvers
CC [M] /home/kushagra/intro_to_os/kk5395_hw6/lab6_1.mod.o
LD [M] /home/kushagra/intro_to_os/kk5395_hw6/lab6_1.ko
BTF [M] /home/kushagra/intro_to_os/kk5395_hw6/lab6_1.ko
Skipping BTF generation for /home/kushagra/intro_to_os/kk5395_hw6/lab6_1.ko due to unavailability of vmlinux
make[1]: Leaving directory '/usr/src/linux-headers-6.2.0-34-generic'
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ make load
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ sudo cat /dev/Lab6
Hello world, the time difference is 6s.
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ sudo cat /dev/Lab6
Hello world, the time difference is 9s.
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ sudo cat /dev/Lab6
Hello world, the time difference is 11s.
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ make unload
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$ make clean
make -C /lib/modules/6.2.0-34-generic/build M=/home/kushagra/intro_to_os/kk5395_hw6 clean
make[1]: Entering directory '/usr/src/linux-headers-6.2.0-34-generic'
CLEAN /home/kushagra/intro_to_os/kk5395_hw6/Module.symvers
make[1]: Leaving directory '/usr/src/linux-headers-6.2.0-34-generic'
kushagra@kushagra-virtual-machine:~/Intro_to_os/kk5395_hw6$
```

Figure 1: Snapshot