Lab – Writing a simple Chardcter device

The files for this lab are located in
~/examples/kernelspace/charDrvEx

- Update the Makefile with the correct kernel directory ~/armsystem/kernel/linux-4.9.30
- Build and test the code – simple character device allocated dynamically with single instance. Use /proc/devices to see the allocated major number and add a device file using mknod with the correct major and minor 0
- Change the code:
  - Use register_chardev_region (instead of alloc_chardev_region) to create 2 instances with Major number 340 and minors 1-2
  - Add another buffer for the second instance
  - Update the read and write handlers to use the correct device
- Compile and check the code:
- One time only:

```
# mknod /dev/clip1 c 340 1
# mknod /dev/clip2 c 340 2
```

- Simple test:

```
# insmod ./chello.ko
# echo “hello” > /dev/clip1
# echo “bye” > /dev/clip2
# cat /dev/clip1
hello
# cat /dev/clip2
bye
```

Part 2 – adding mmap handler

Add the handler mmap to share the kernel buffer with the user.
Test with the following user space code:

```
char *p;
int fd = open(“/dev/clip1”, O_RDWR);
p=mmap(0,8192, PROT_READ | PROT_WRITE, MAP_SHARED, fd, 0);

write(fd, “hello” , 6);
puts(p);

// This should print hello
```