EEL 4930/5934 ADVANCED SYSTEMS PROGRAMMING
PROGRAMMING ASSIGNMENT 6

Due: Friday, April 15th

In this assignment you'll change the Linux USB Keyboard driver (see http://lxr.free-electrons.com/source/drivers/hid/usbhid/usbkbd.c) to change the way the CAPSLOCK led is turned on. Normally, the CAPSLOCK led is on when that key is pressed the first time and is turned off when it pressed again, and is on again when it is pressed the next time, and so on. You'll change the code such that when the driver is in MODE1, CAPSLOCK will be handled as usual. However, when in MODE2, CAPSLOCK led will be off when CAPSLOCK is pressed the first time after transitioning to MODE2 and will be on when it is pressed the next time, and so on. MODE2 will be activated when NUMLOCK is pressed, CAPSLOCK is not pressed, and CAPSLOCK is not on at the moment. When transitioning to MODE2, the CAPSLOCK led will be turned on automatically. MODE2 will be active until NUMLOCK is pressed again. At this point your driver should leave the CAPSLOCK led status in a way that will be compatible with MODE1, e.g, whether the input layer thinks the CAPSLOCK is on or not.

Please note that this assignment requires a demo. You should schedule a time with the TA/grader to show your code. You can test your driver on a virtual machine, e.g., Virtual Box and check the status of your leds and the characters you type on the terminal. Make sure to write a message to the kernel log when mode changes happen.

You will submit your driver code, a Makefile, and a README file.