CMPE242
Homework
Prototype Board and Menucofig
HL

1. Complete the prototype board with
(1.1) wire wrapping board and target platform mounted on the board;
(1.2) wire wrapping GPIO Input and Output Testing Circuit, clearly showing the circuit components on the boards, including resistors, LEDs and toggle switch for input high and input low testing purpose;
(1.3) wire wrapping PWM output pin to motor drive, depending on the motor drive of your choice you may use terminal block connector (Figure 1) or direct wire connection if your choice of the drive is from “easy drive” (Figure 2)

Figure 1.

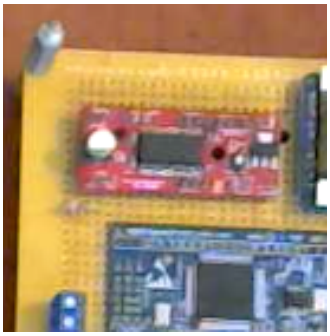

Figure 2.

Note for CMPE 242, you can choose your motor drive based on the discussion in class, use professional grade drive (Figure 3) is recommended. Reference from the class PPT on github: https://github.com/hualili/CMPE242-Embedded-Systems-/blob/master/2022S/2022S-105c-motor-drive-manual-updated-hl-2022-2-23.pdf

Figure 3.

2. Take a photo of your prototype board, be sure to have the details of (1.1) – (1.3) in the photo. You may use multiple photos if you want.

3. Take 5 second video of your prototype board.

4. Complete the kernel OS source and device drive development platform download based on the lecture.
(4.1) Finish the installation, take a screen capture of your installed software, similar to Figure 4.

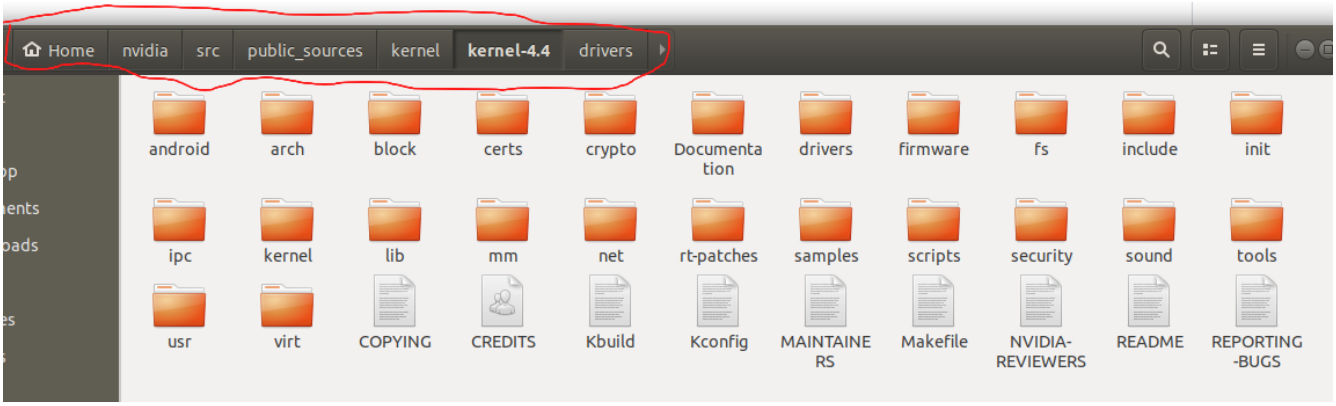

Figure 4. Please make sure to show the directory path structure in your screen capture like the one shown here.

(4.2) Run $make menuconfig and capture the screen similar as in Figure 5. Be sure to capture the version number of yoru menuconfig screen as highlighted in read marks in Figure 5.

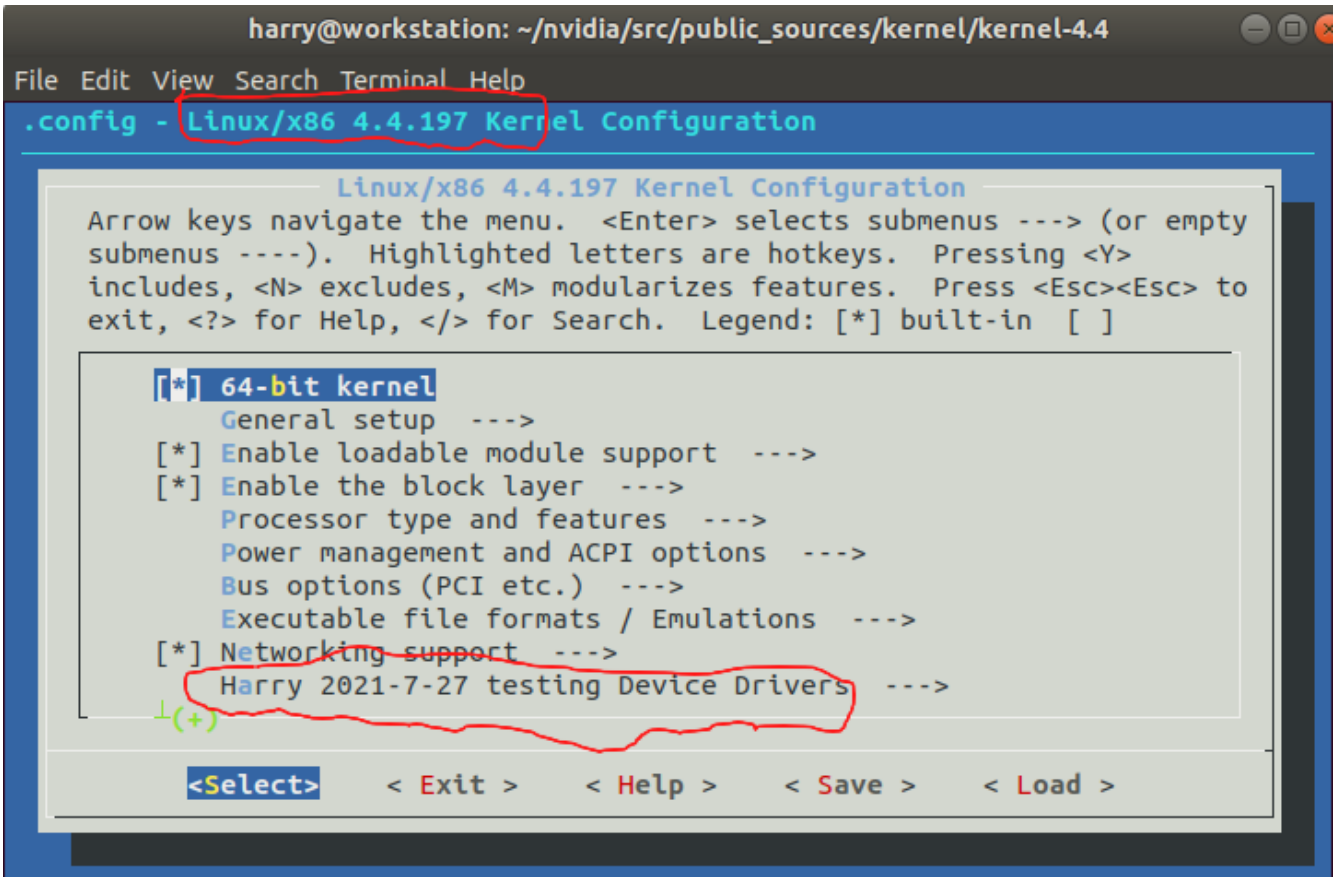

Figure 5.

5. Login to your target platform, take a photo of your login page with your user ID similar as in Figure 6.

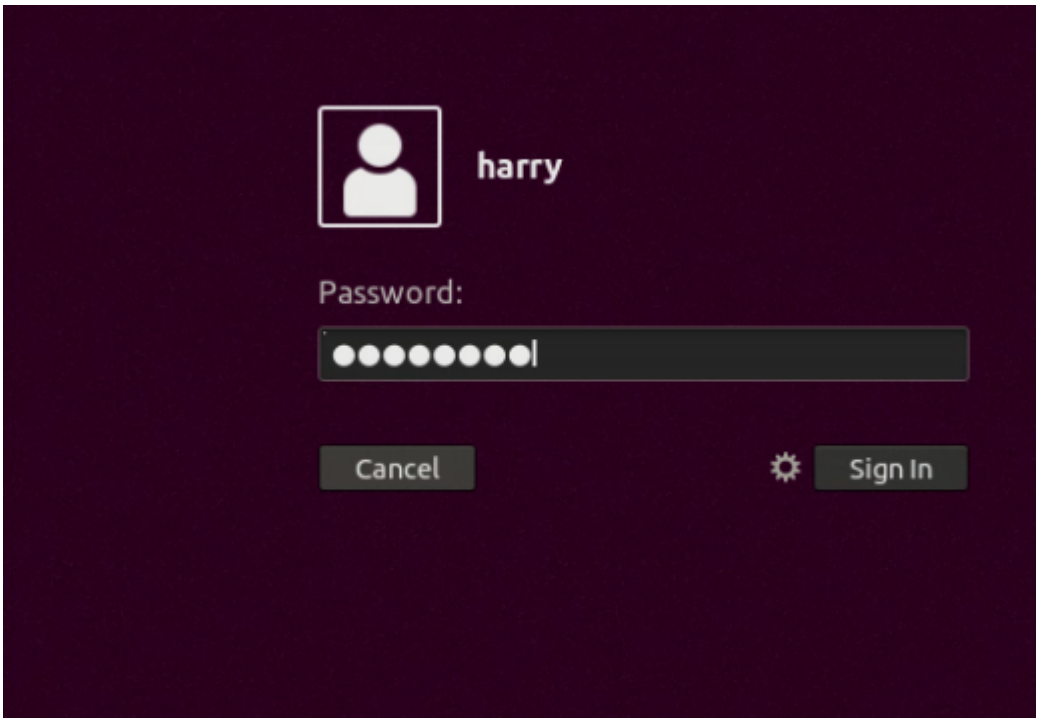

Figure 6.

6. Run the python GPIO configuration program to configure
(6.1) GPIO pin 79 and pin 78 as output pin and input pin respectively and take photo, similar to Figure 7;
(6.2) run Python or C/C++ code to test GPIO, and to send output 1 to light up LED, and take a photo;

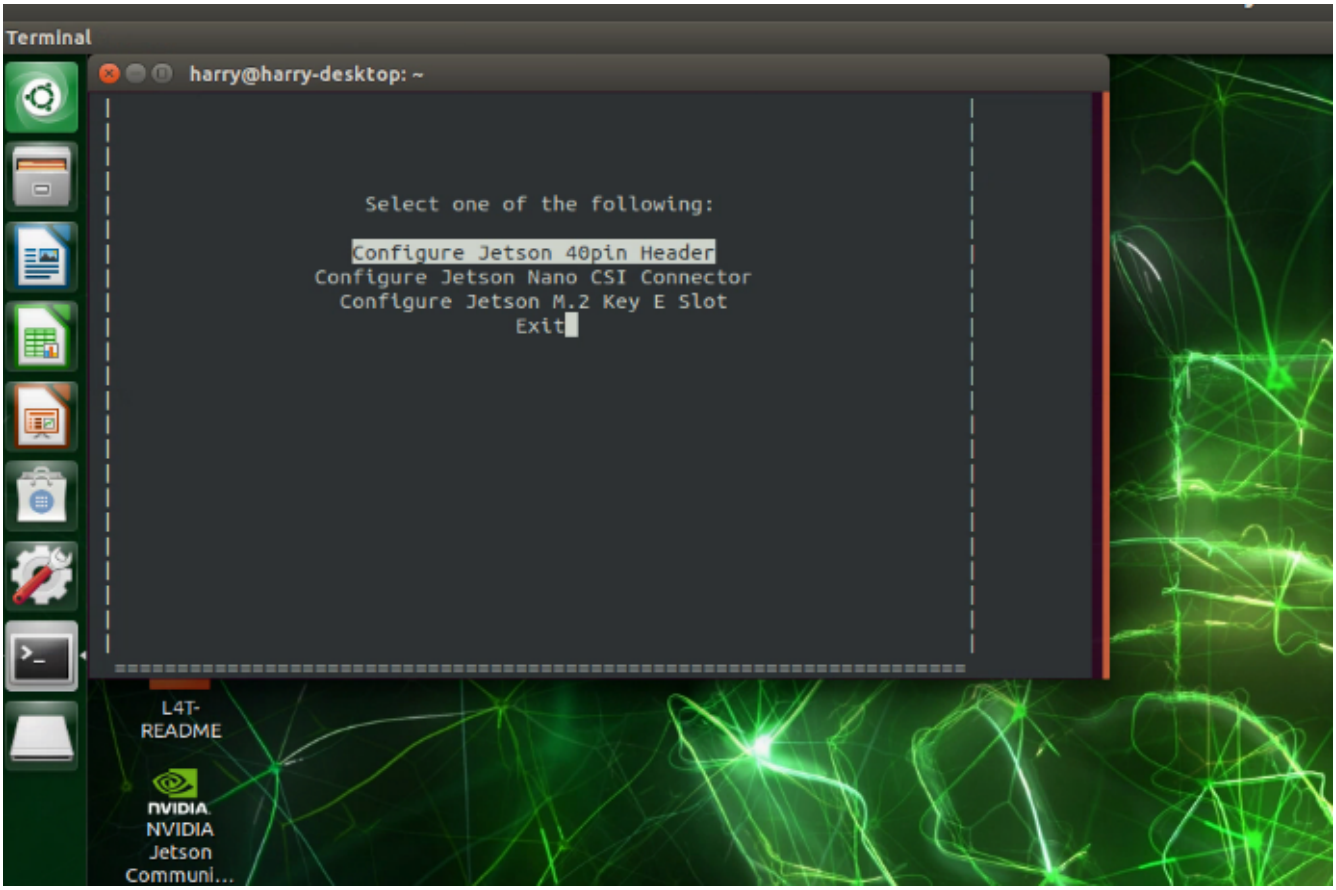

Figure 7.

7. Combine the above 1 to 6 into one PDF file, then zip it (except the video clip, please make it a stand alone file, then zip it together with the pdf file to form one zip file). Use the following file naming convention:
firstName_lastName_SID(last-4-digits)_hw_motor_drive1.pdf.
Submit it to the class canvas.

(END)