LAB2 REPORT

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# The current lab’s goals

* Configure GPIO pins and PWM peripheral to drive the motors.
* Configure motors to be adjustable (forward, back, left, right etc.)
* Enable software to control direction and speed.

# Steps taken to accomplish the goals

* Configure PB4, PB5, PE4, PE5 GPIO pins as the PWM peripheral in the alternate function register.
* Configure the port control register for each GPIO pin to determine which module each of the pins are connected to.
* Configure PF2 as a digital input and PF3 as a digital output (PF3 must be connected to nsleep pin – MUST be set to 1)
* Write routines to configure peripheral.
* Develop the driver for different movements (Left Forward, Right Forward etc.)

# Problems faced and how it was solved

Motors would not work. We forgot to wait for the peripheral clock to start up. We needed to busy wait: While (( SYSCTL->PRPWM & pr\_mask) ==0) {}

# Ready Reference

* Registers to configure PWM signal:

PWM0 -> \_0\_LOAD

PWM0 -> \_0\_CMPA

PWM0 -> \_0\_GENA

PWM0 -> \_0\_CTL

PWM0 -> ENABLE

* Look at the datasheet drv8833.pdf given on (<https://ay14-15.moodle.wisc.edu/prod/mod/folder/view.php?id=108529>)