Prelab 10

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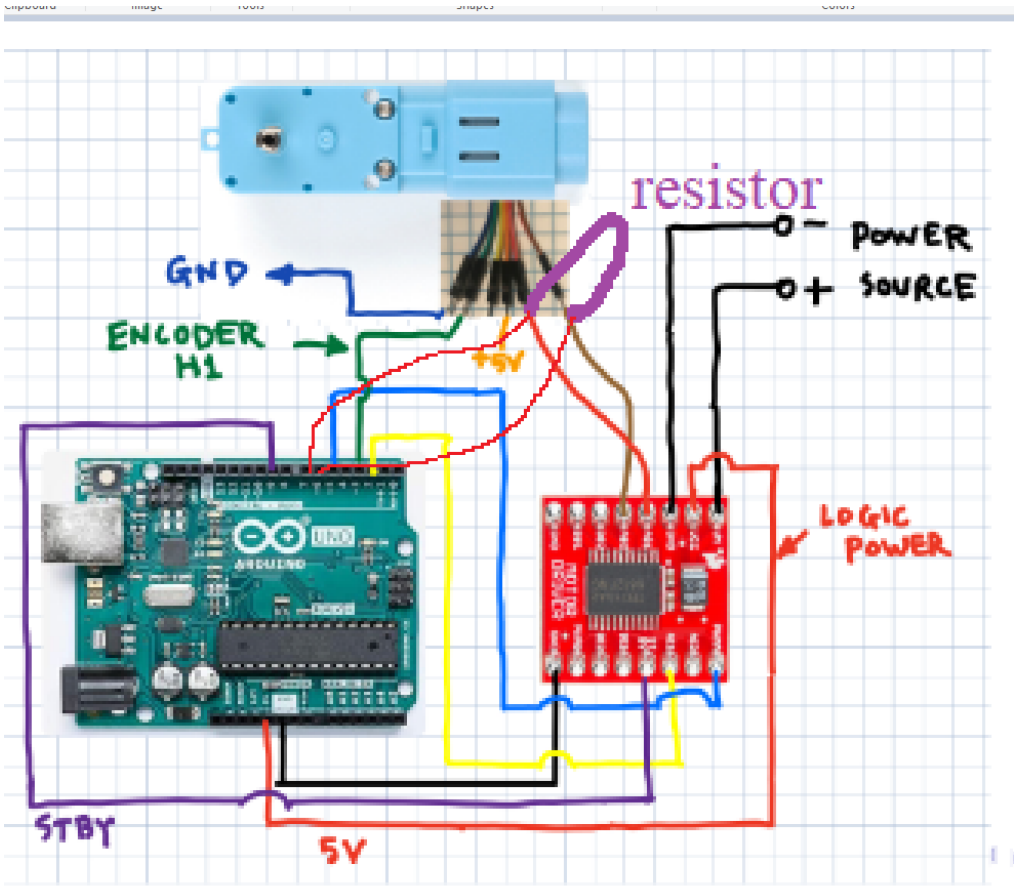
1. 

   Taking the diagram from lecture, the only thing that needs to be added is a resistor is parallel as discussed in question 2, to measure back emf. The encoder is already setup to measure angular velocity, and these two measurements in junction is all that is needed to measure necessary motor constants.

2. The motor constant can be found by measuring the back emf across the motor using a resistor in parallel with the motor. Measuring the voltage across the resistor gives the voltage across the motor as well. By varying the load on the motor, it will run at different angular rates. This rate will be measured using the encoder on the motor. By creating a plot of angular velocity against voltage in a linear plot, the slope of the curve will be the motor constant.

3. By varying input voltage to change the torque instead of applying a different external load, the torque due to drag alone can be found. By plotting torque against angular rate, the slope of the linear graph will be the drag coefficient.

4. Sparkfun TB6612FNG Installed