Experiments for EE324: Control Systems Lab

2. DC Motor Position Control via Arduino Mega:

Targets:
   a) Design and implement an embedded (PID) feedback controller using Arduino Mega
   b) Design and implement a motor driver circuit and interface the Arduino Mega with this circuit

Refer to the schematic diagram below. The blocks represent the main components of the experiment. Your lab assignment consists of writing the Arduino code and developing the hardware interconnections required to satisfy the above targets. Finally you are required to achieve the following design specifications for the DC motor position control. For a step command of 180 degrees, the DC motor should satisfy less than 0.5 sec rise time, 1 sec settling time and 10% overshoot.

A sample Arduino capable of moving the motor in one direction will be provided for reference. You are required to figure the rest of the experiment out yourself. **Please get the TAs to check all hardware interconnections before powering on the circuits.**
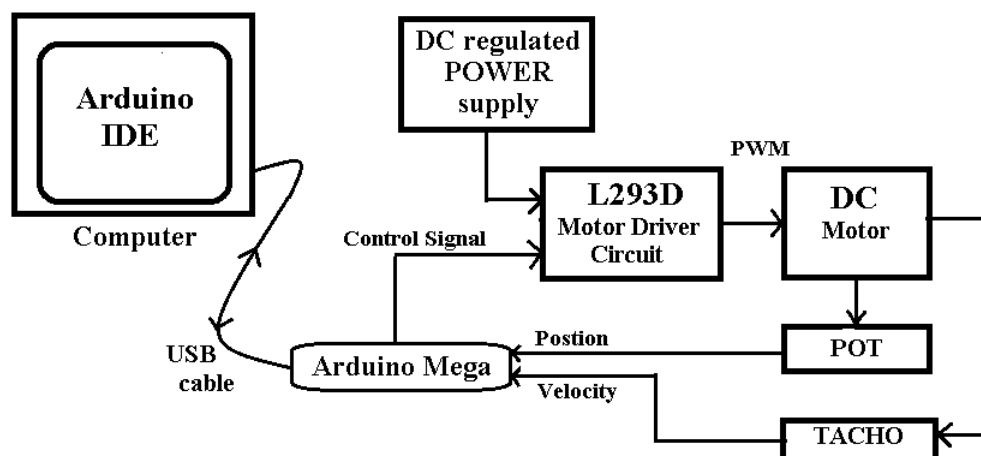

Figure 1