MISR UNIVERSITY FOR SCIENCE AND TECHNOLOGY
COLLEGE OF ENGINEERING
MECHATRONICS DEPARTMENT


# MTE 405 SENSORS AND MEASUREMENTS

LAB 6 – SPRING 2019

Lab 6

# Goals Of The Lab

Encoder Speed Monitoring

Measuring Servo Motor Speed

Lab 6

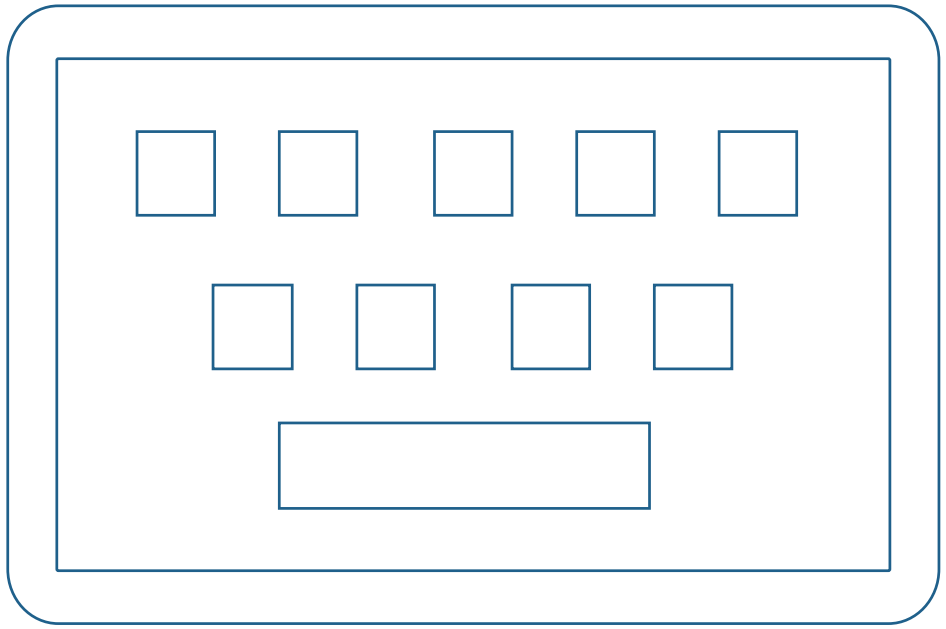
# Exercise 1

DC Speed Monitoring using Quadrature Encoder

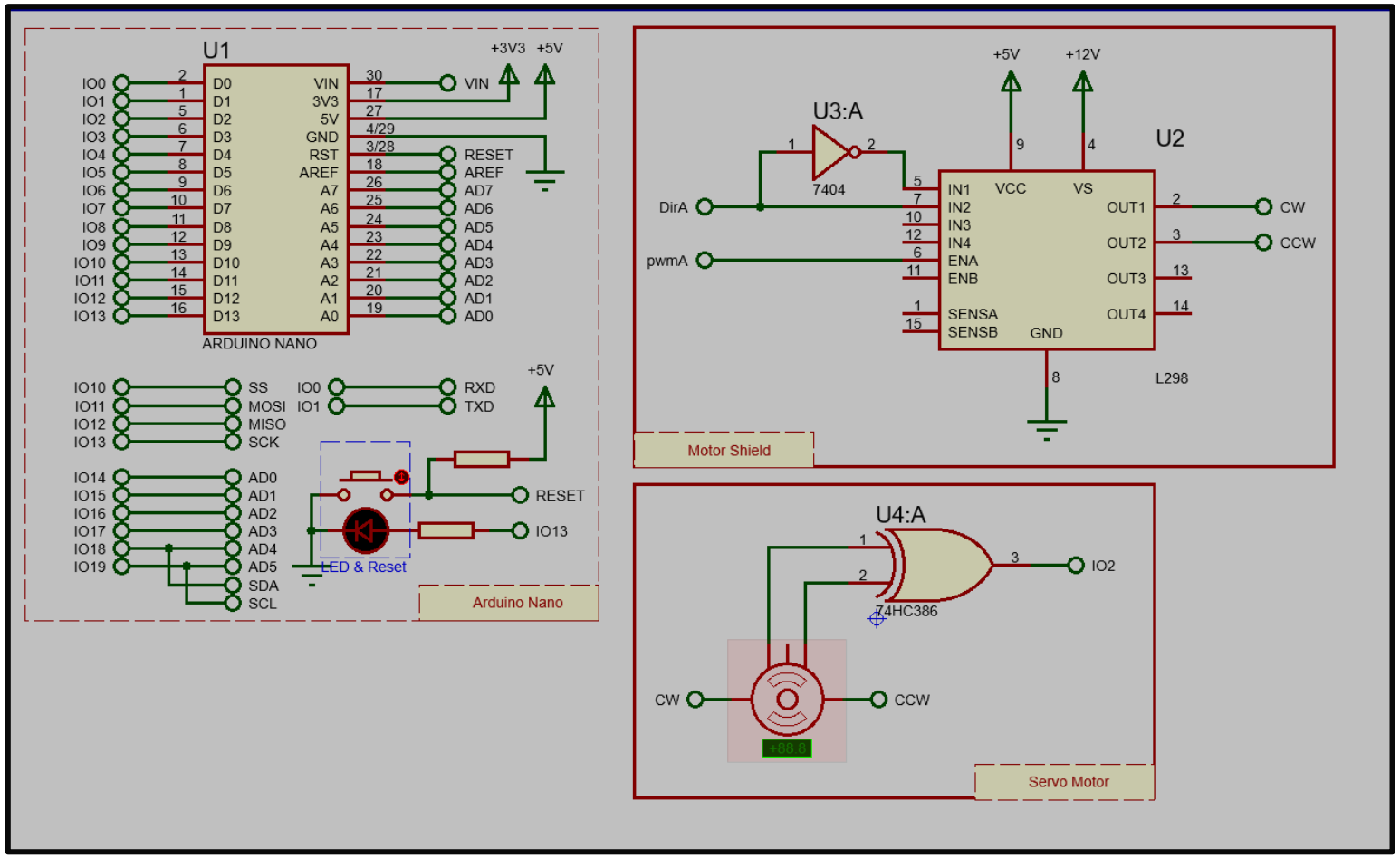
Lab 6

# Exercise Objective

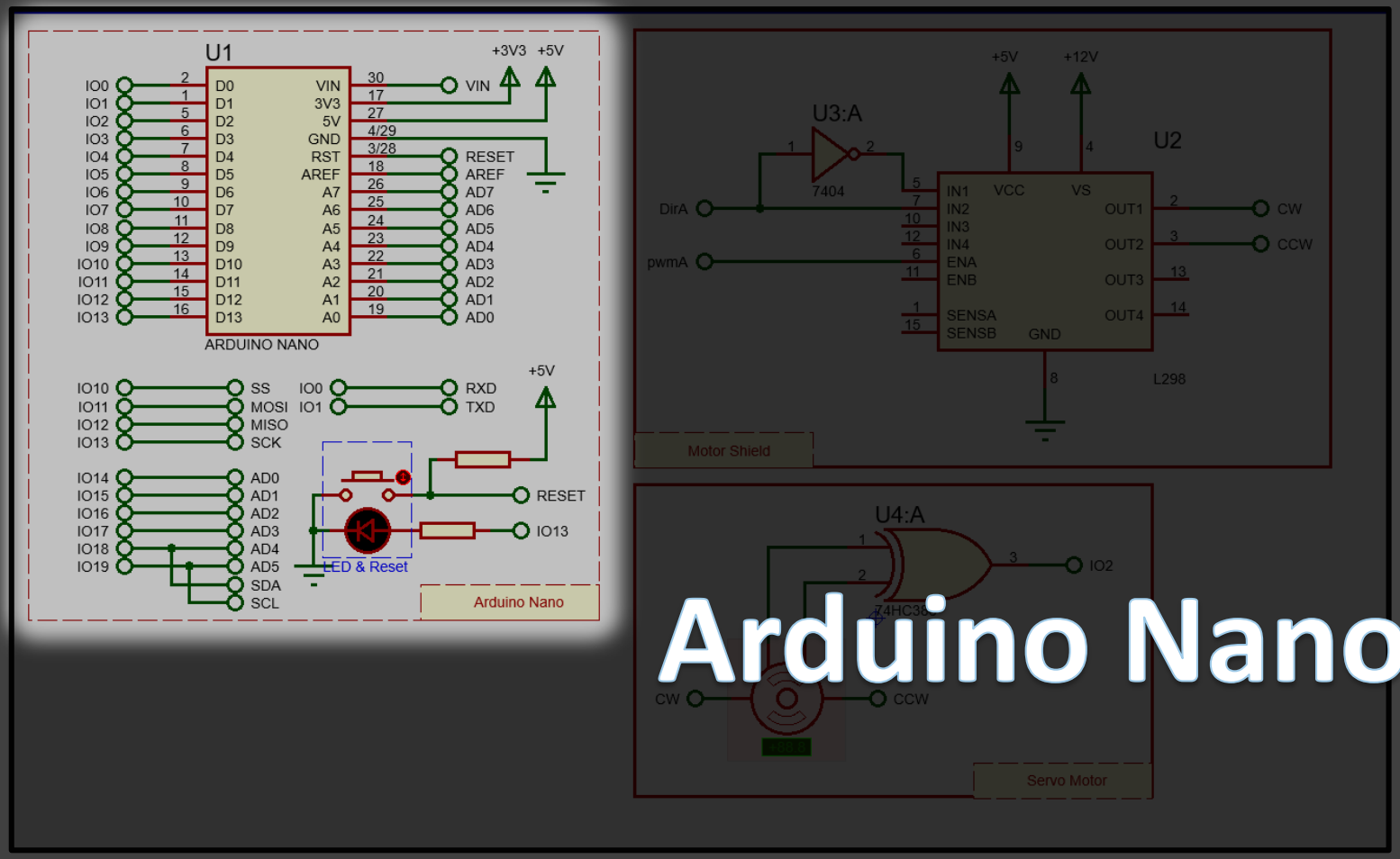
- Using XOR for doubling encoder resolution
- Using Timer One Library
- Using External Interrupt
- Sharing Variables between interrupts



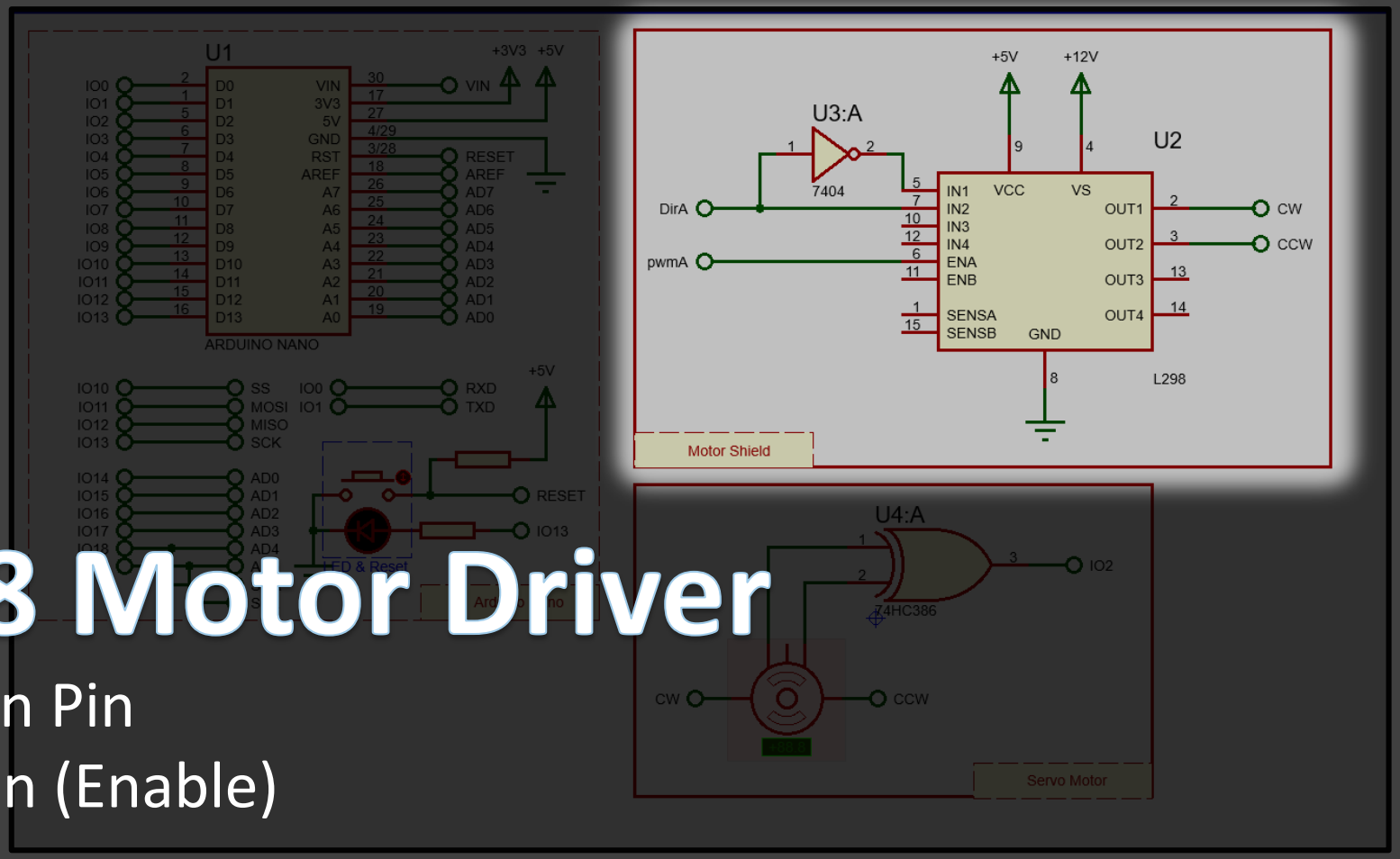
# Hardware Configuration



# Hardware Configuration



# Hardware Configuration

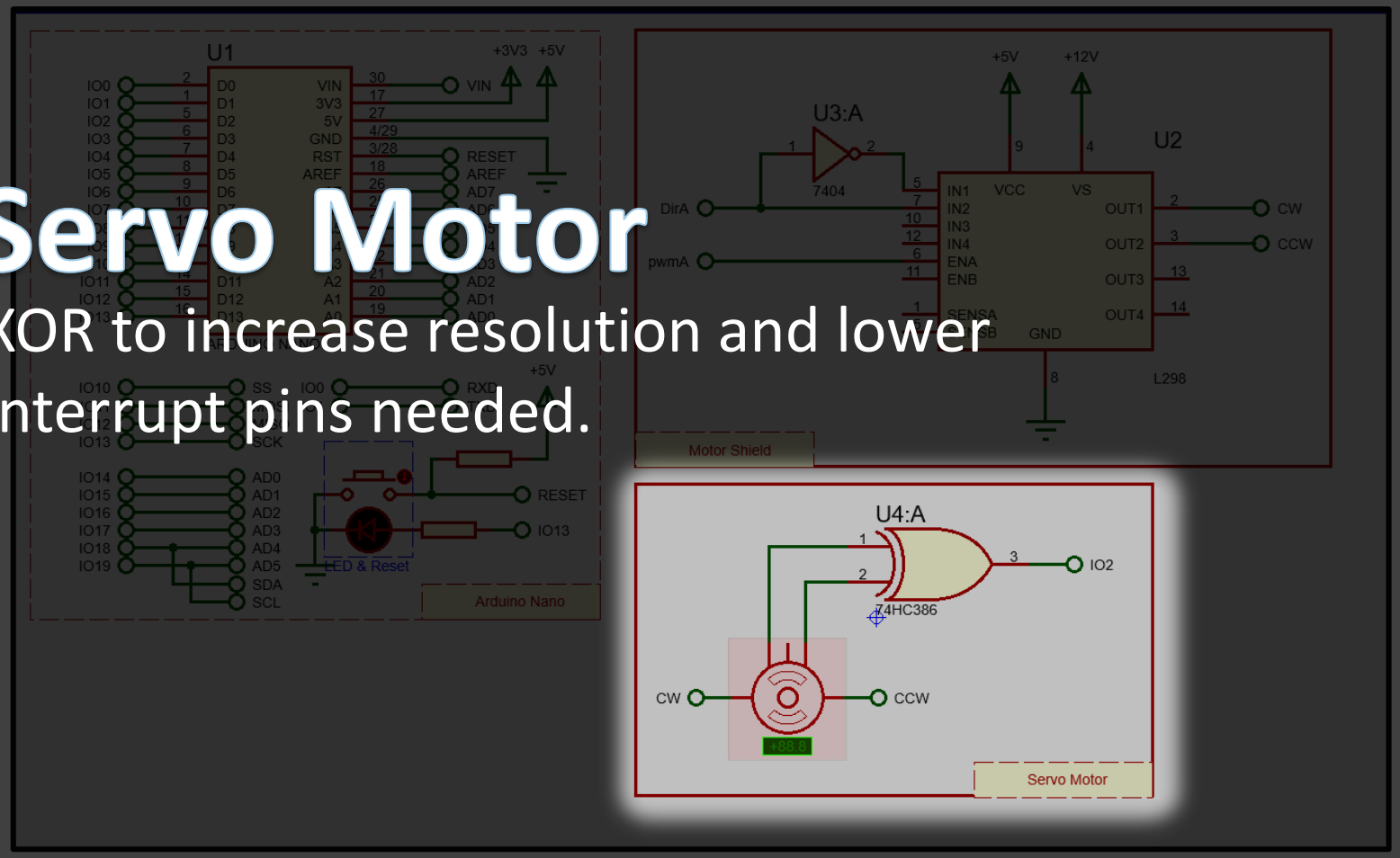



# L298 Motor Driver

Direction Pin

PWM Pin (Enable)

# Hardware Configuration

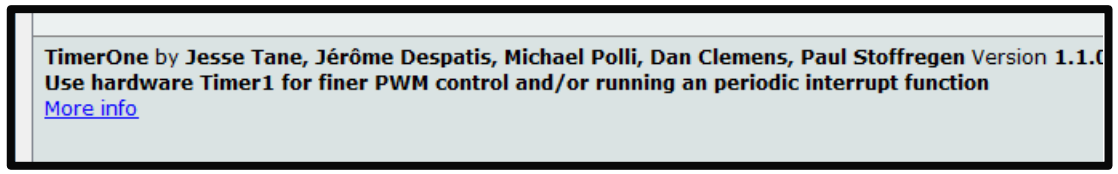



## Servo Motor

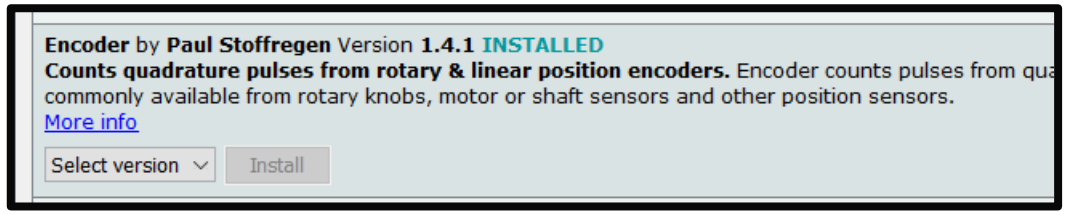
XOR to increase resolution and lower interrupt pins needed.

# Libraries used in code

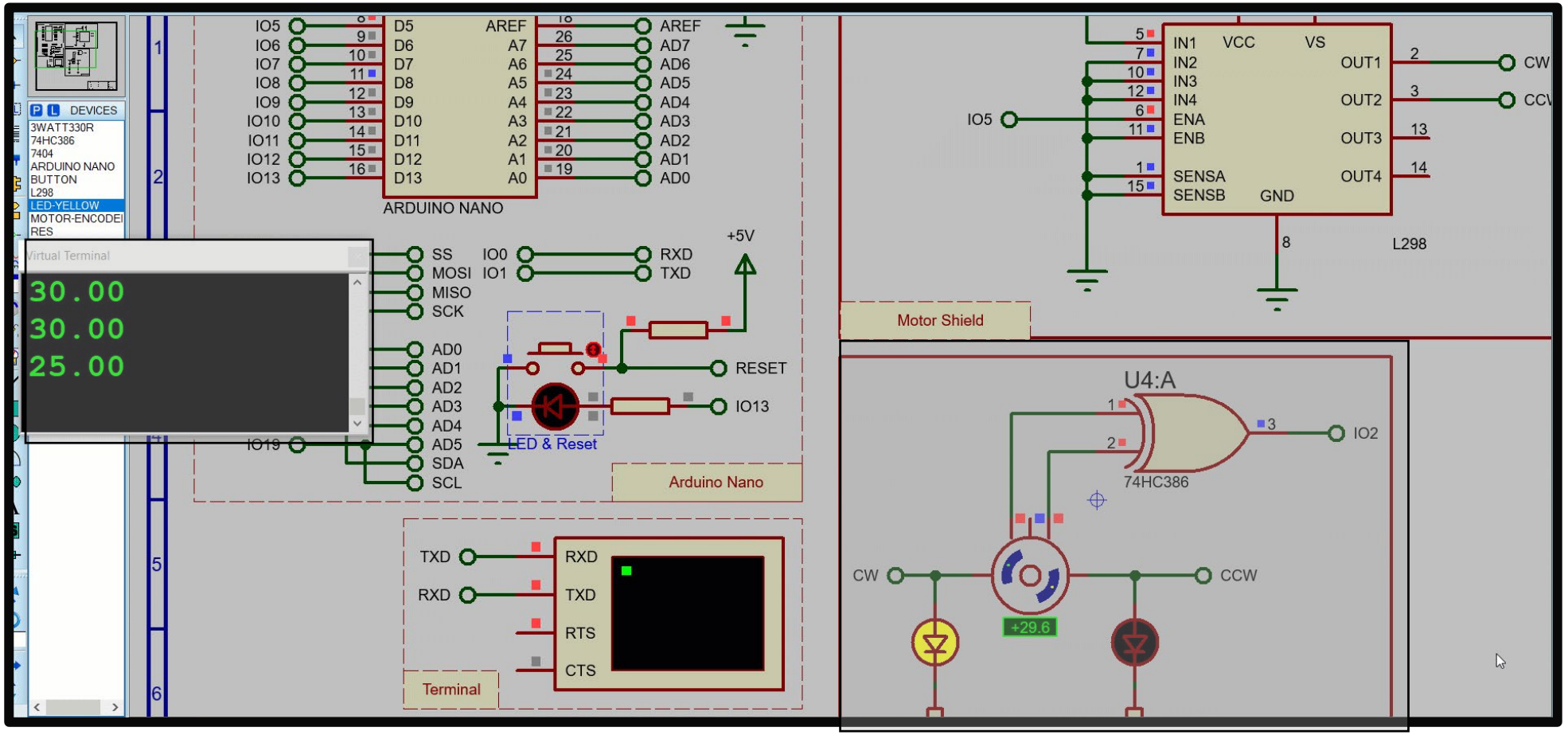
## TimerOne Library



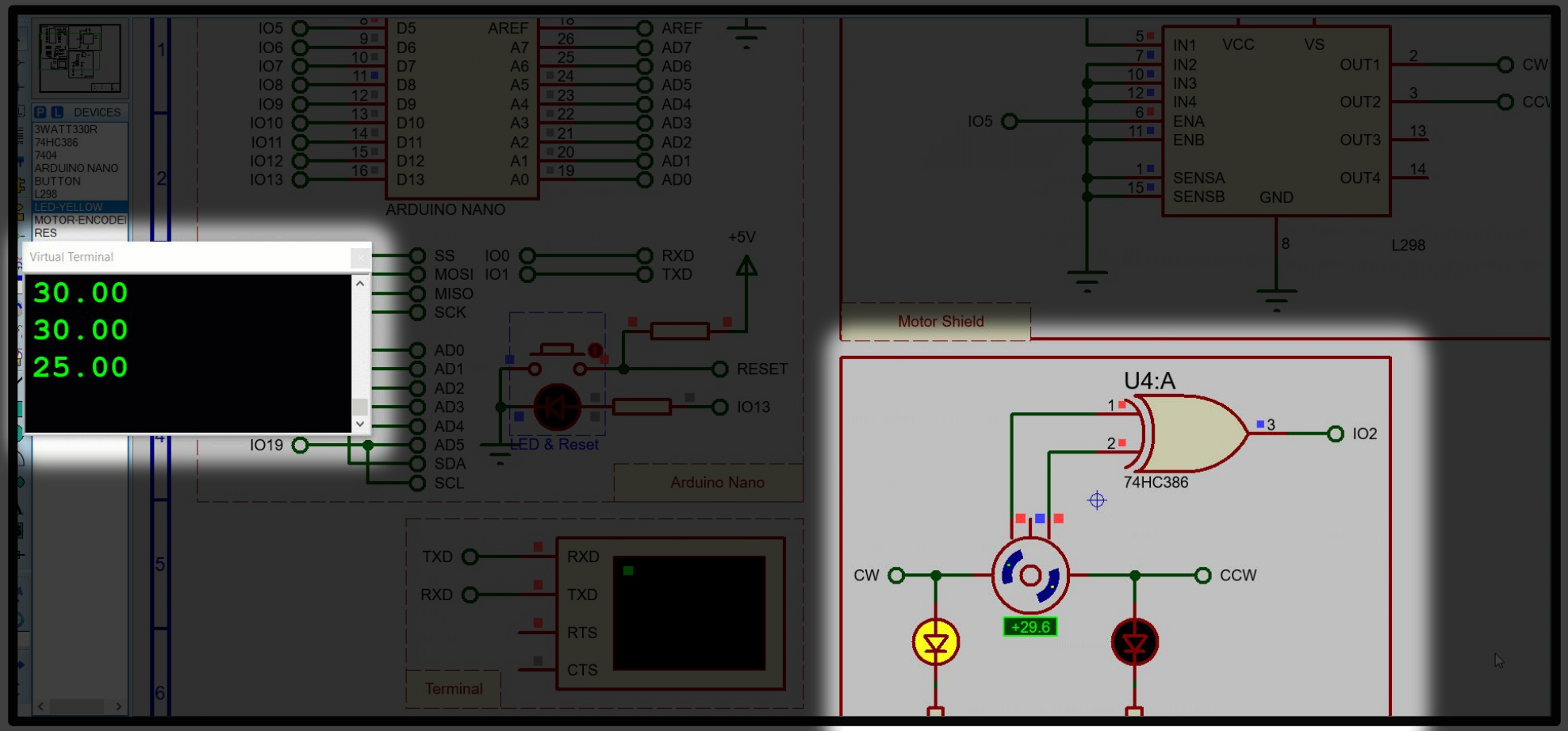

## ~~Encoder Library~~



# Final Result



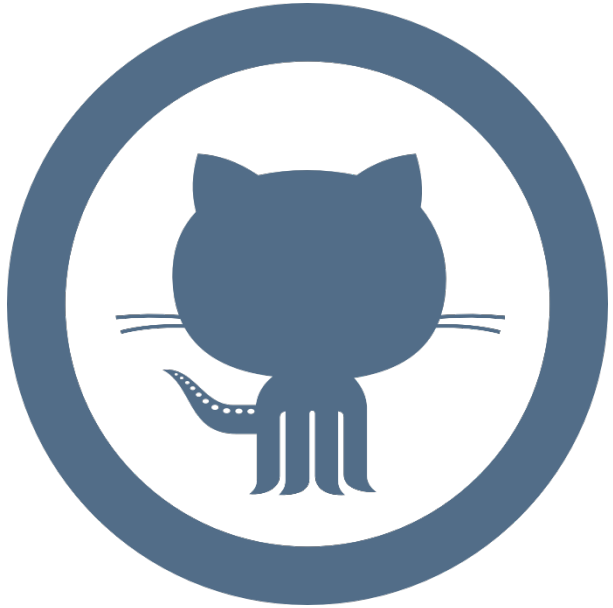
# Final Result



Lab 6

# Classwork

- Modify the schematic to communicate with **serialPlot**
- Plot and log PWM and Speed



Don’t forget to pull the lab update from.

http://github.com/wbadry/mte405

# END OF Lab 6