CpE301 - Design Assignment 6 DUE: See Website

The goal of the assignment is to develop the above code to do the following:

1. Interface the provided ICM-20948 9-DOF IMU Sensor to the ATmega328pb using the I2C interface. Using the earlier developed code for UART, display the accelerometer, gyro, and magnetometer data to the UART Terminal.
2. Apply Simple averaging algorithm to smooth the values to the accelerometer, gyro, and magnetometer data. Plot the above nine values as graphs.
3. Apply Complementary to the accelerometer, gyro, and magnetometer data to determine the roll, pitch, and yaw of the sensor orientation. Plot the above three values as graphs.

Submission:
The following are required for successful completion of the design assignment:

a. AVR C code that has been compiled and working submitted to the github repository.
b. A word/pdf document that contains the C/assembly code well documented along with the kiCAD schematics with components used connected to the ATmega328P/PB.
c. In the word/pdf provide the screenshots of 1) successful compilation, 2) snapshot of the demo circuit, 3) screenshot of demo outputs, and 4) video links for each task.
d. Provide a text file in your github with links to youtube for all tasks.

Evaluation Rubrics:
See class website for the DA evaluation rubrics.