CSE 308- Lab #3
Photoresistor-LDR: ADC and PWM

Due:
Demo: Thursday February 27th 2020, 11:00 am
Report Monday March 2nd 2020, 11:50 pm

Objectives:

After the lab, you should know how to

- Write Python code to interface photoresistor to Raspberry Pi
- Write Python code to configure PWM on Raspberry Pi and control LED brightness

Assignment:

(**Demo, group, 100 points**)

1. You are to design and build a circuit that acts as day and night detector. Use the Raspberry Pi, Photoresistor, ADC, resistors and LED.
2. Write the code to read the photoresistor and output the data to the PWM port in the Raspberry Pi to control the brightness of the LED based up on the reading of the Sensor.

(**Individual- 50 points**)

1. Read documentation on PCF8591. What is the function of the address and control bytes?
2. Read the Raspberry Pi documentation, and what ports are used for PWM?
3. Write a report (max of 2 pages, single line in 12 pts Arial font) on how the PWM (Pulse Width Modulation) works. Make sure to cite your sources.

Deliverables:

You need to run in using Blackboard

1. Python code (include comments: to explain your code)
2. Screen shot of your circuit.
3. A report answering the questions in the individual part above.

Grading

This lab is worth 150 points.