

ELEC 291 – Lab #1

Summer 2022

Photoresistor

Description:

In this lab we use a photoresistor sensor to measure and control the environment light.

PART A

- Measuring the environment light with a CdS photocell (photoresistor) in 3 different lighting states:
 - Normal (Normal lighting in the lab)
 - Dark (For example, when the photocell is covered)
 - Bright (For example, when light is shining directly at the photocell)
- Displaying the sensor resistance and the lighting state on the computer screen.
Example: “Resistance = ... k Ω (Dark)”

PART B

- Controlling the brightness of an LED based on the environment lighting. The darker the environment, the brighter the LED should be.

PART C

- Displaying the sensor resistance on the LCD.
Example: “R = ... k ohm”

Pre-Lab

- Connect the circuit and microcontroller for the experiments above on Tinkercad and submit the link(s) on Canvas.

Deliverables

Deliverables	Due Date	Weight
Pre-Lab	Sunday May 22, 11:59 PM	3%
Lab Code	Tuesday May 24, 11:59 PM	2%
Live Demo	Wednesday May 25	6%
Answer to Questions	Wednesday May 25	4%
Total		15%