



UNIVERSITY COLLEGE OF ENGINEERING, DINDIGUL - 624622

AUTOMATIC FAULT DETECTION IN STREET LIGHTS

BE. ELECTRONICS AND COMMUNICATIONS ENGINEERING

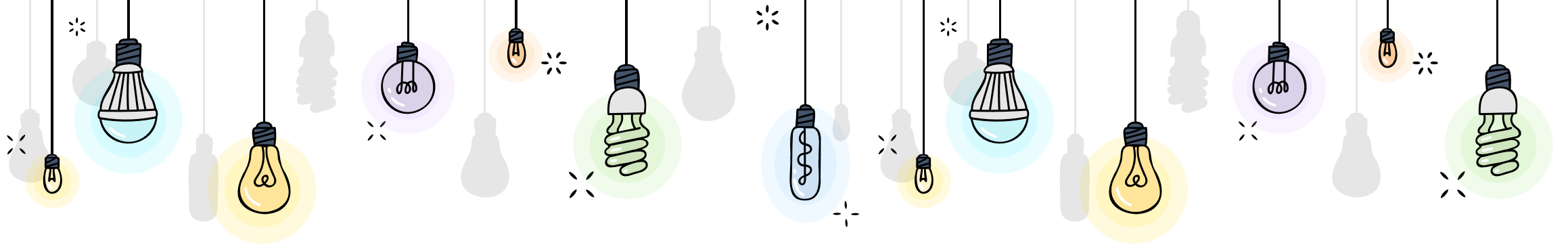
PROJECT GUIDE

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TF-ECE**

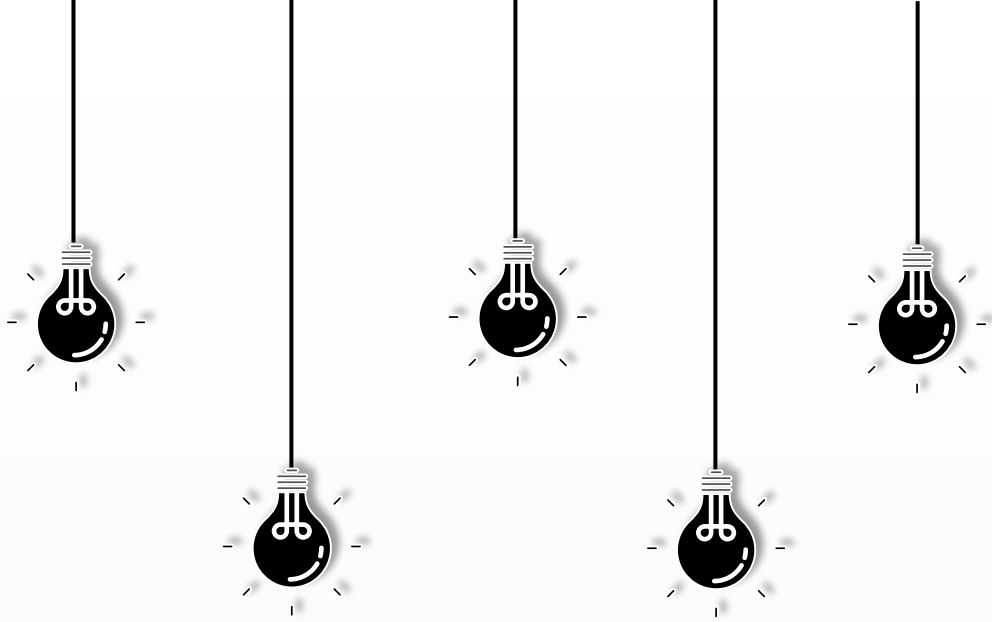
PROJECT COORDINATOR

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WELCOME TO OUR PRESENTATION



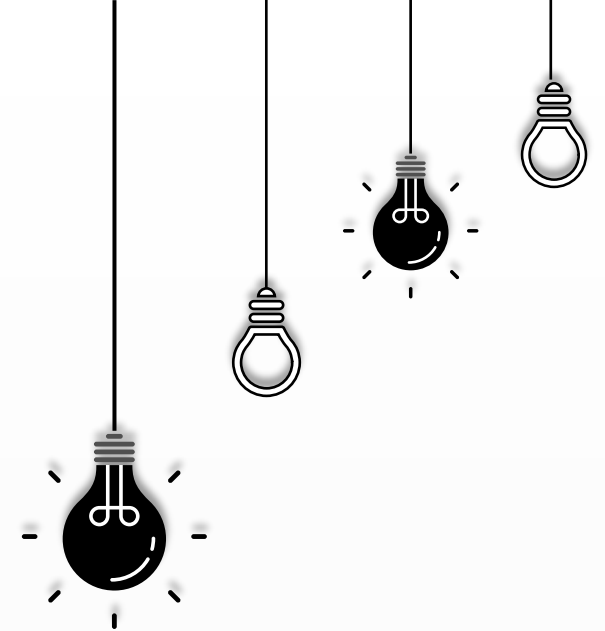
ABSTRACT

The project "Automatic Fault Detection in street lights" is all about making a system that can easily spot when there's something wrong with street lights. This helps make public places safer and ensures that the lights work reliably.



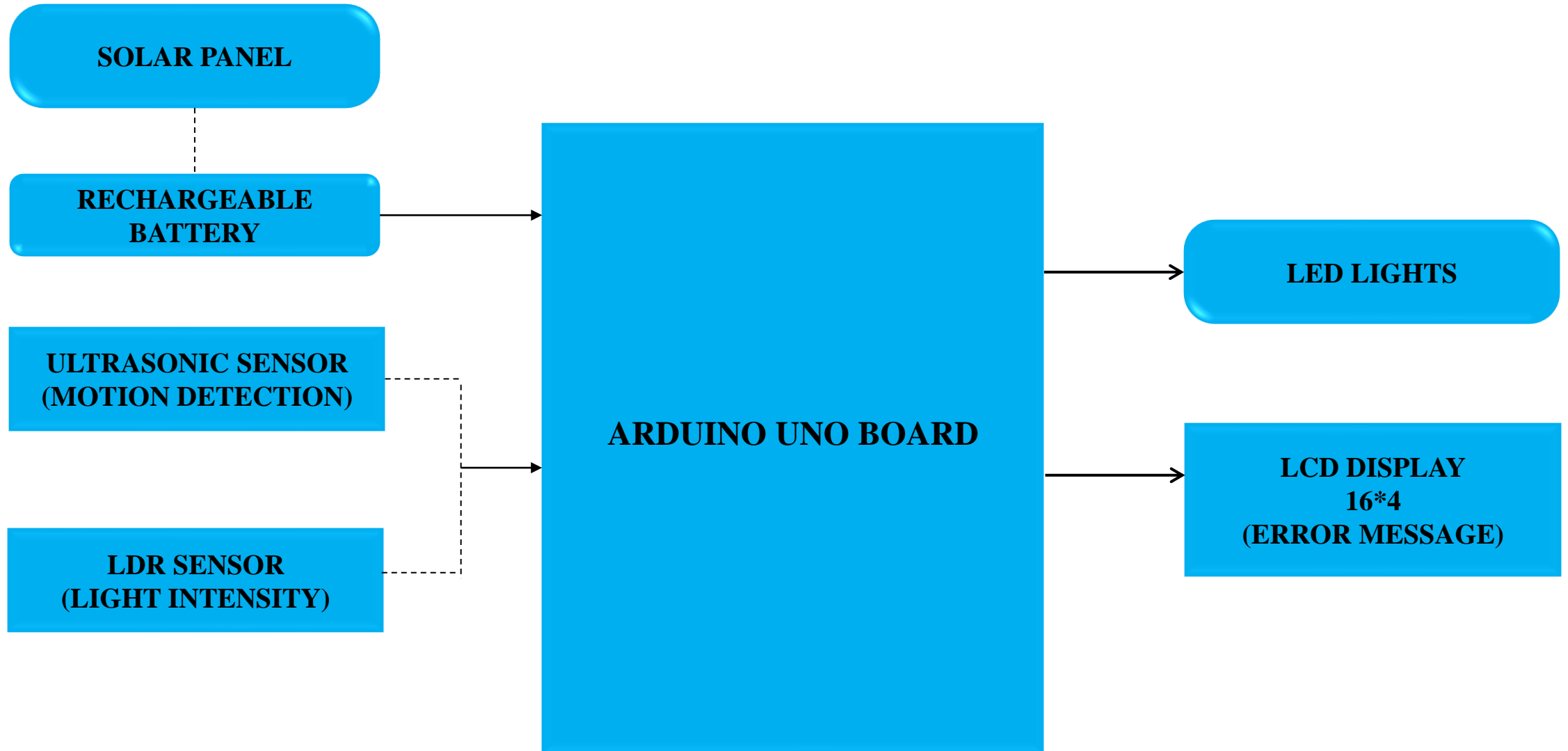
ABSTRACT

- Solar energy is the energy that comes from the sun in the form of light and heat. It can be converted into electricity or other useful forms of energy.
- It reduces the energy consumption and costs of the street lighting system.
- The project “Automatic Fault Detection in Street Light”, focuses on creating a system to quickly find problems with street lights and making public spaces safer and more reliable.
- Old methods of checking street lights are slow and need a lot of manual work. The solution aims to make this process faster and easier.
- Used components like an Arduino UNO board, LCD display, LED lights, LDR sensor, Ultrasonic sensor, Solar panel, and Battery are used.
- The Arduino UNO board acts as the main brain of our system.
- An LDR sensor is a device that used to detect the intensity of the light whether the solar light is working or not working.
- Ultrasonic sensor is a device that used to sense the movement of vehicles, pedestrians, or animals on the road, if there is any object comes near the ultrasonic Sensor, the light will ON. Otherwise, the light will OFF.
- If any fault is detected in the system, it will shows the error message on the LCD screen.



DETAILED DESIGN

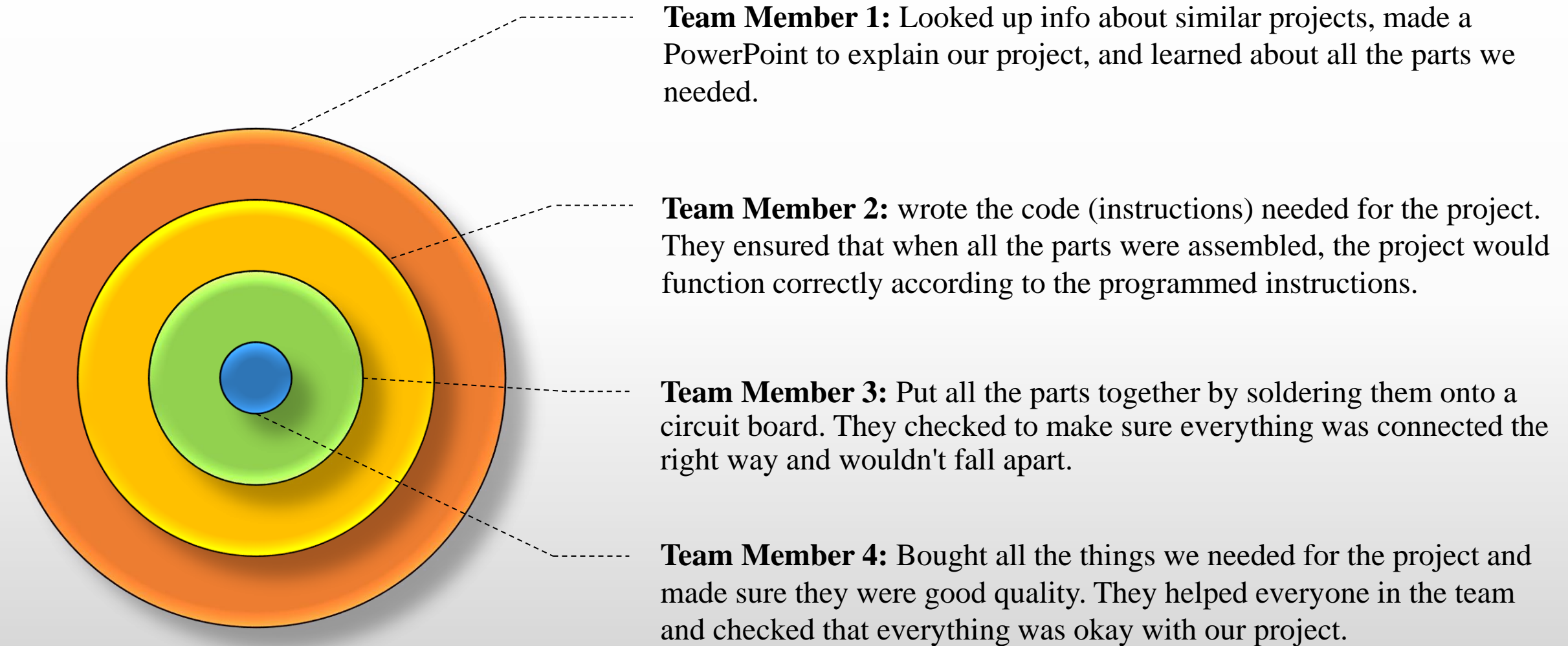
DETAILED DESIGN





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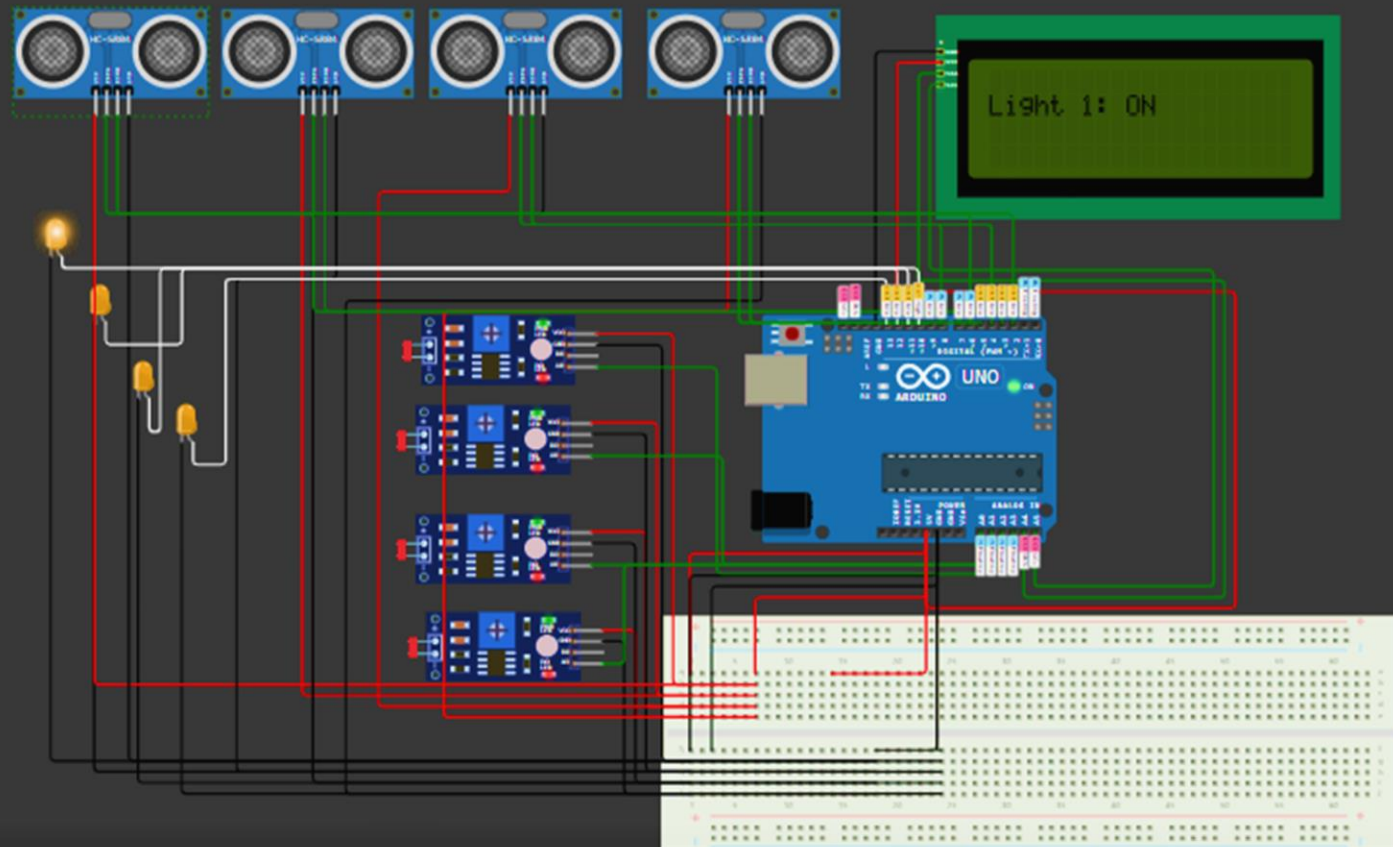
RESULT OBTAINED

- If the ultrasonic sensor detects a distance of 170cm, it triggers the condition for activating "light 1." This means that when the sensor measures an object or obstruction at this distance, the programmed response is to turn **ON** "light 1."

Simulation

00:05.501 97%

Editing Ultrasonic Distance Sensor
Distance: 170cm

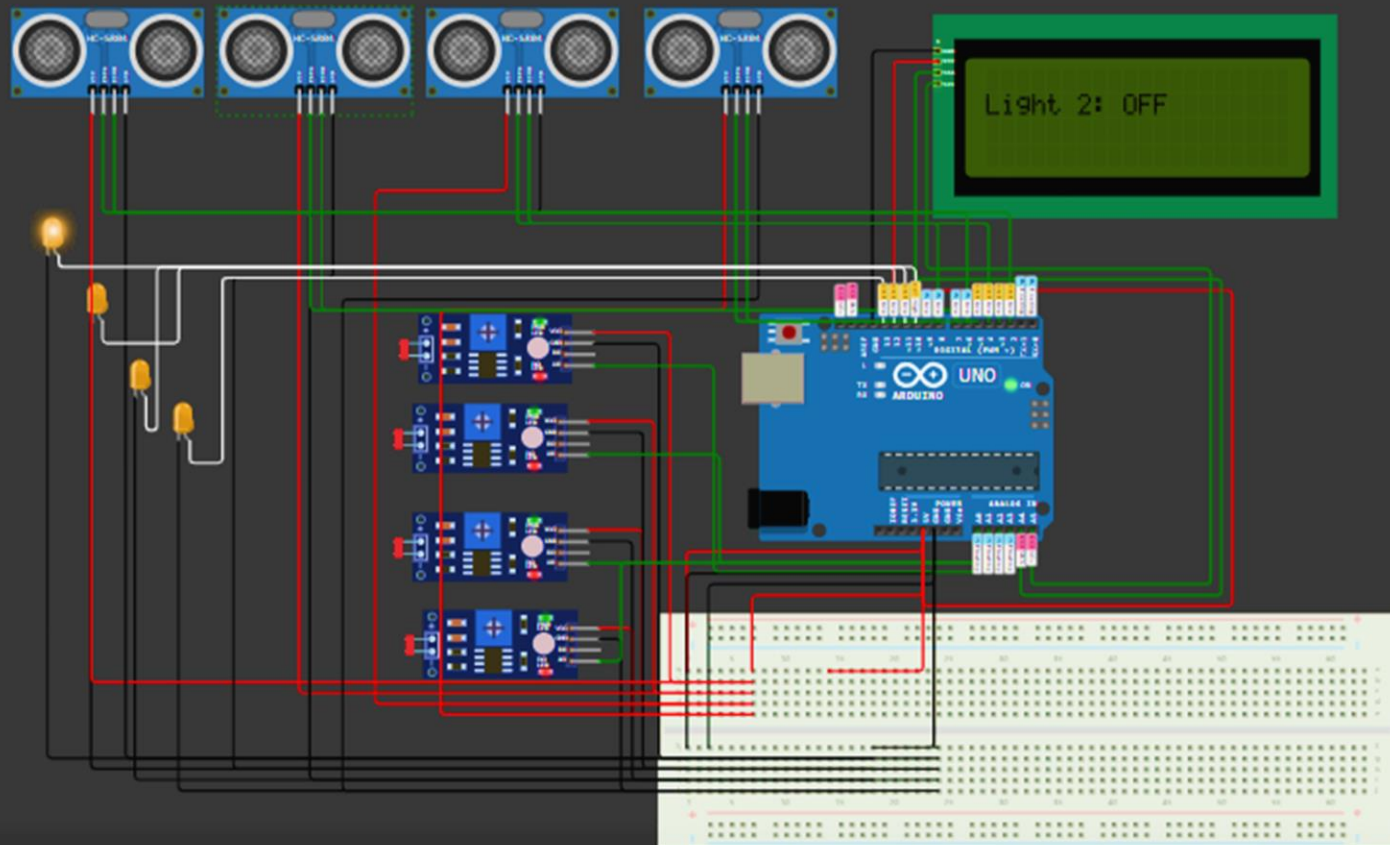


- If the ultrasonic sensor measures a distance of 201 cm, then "light 2" will be turned **OFF** "light 2" should be turned **OFF** according to the programmed conditions or logic.

Simulation

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Editing Ultrasonic Distance Sensor
Distance: 201cm

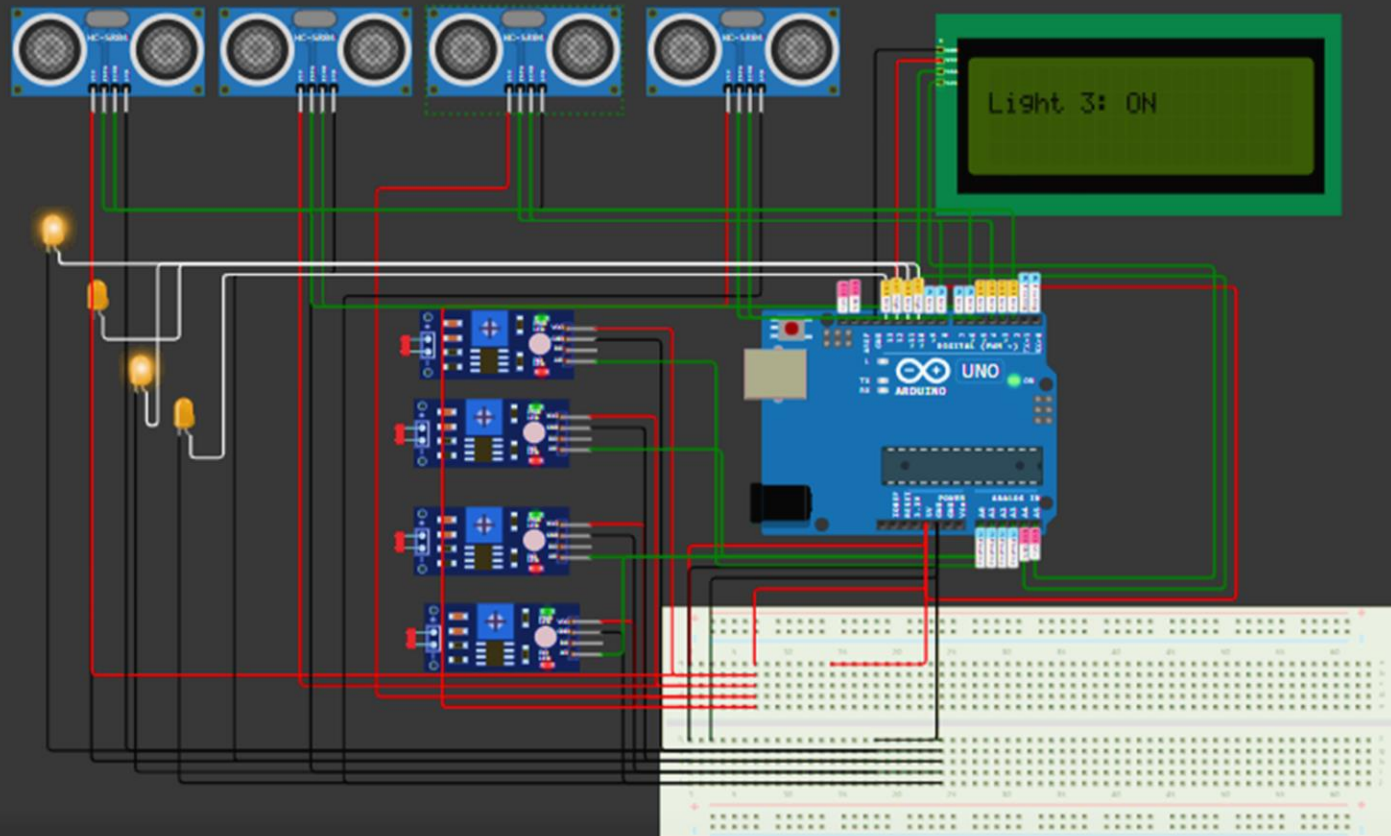


- If the ultrasonic sensor measures a distance of 200 cm, then the condition for turning **ON** "light 3" is met

Simulation

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Editing Ultrasonic Distance Sensor
Distance:  200cm

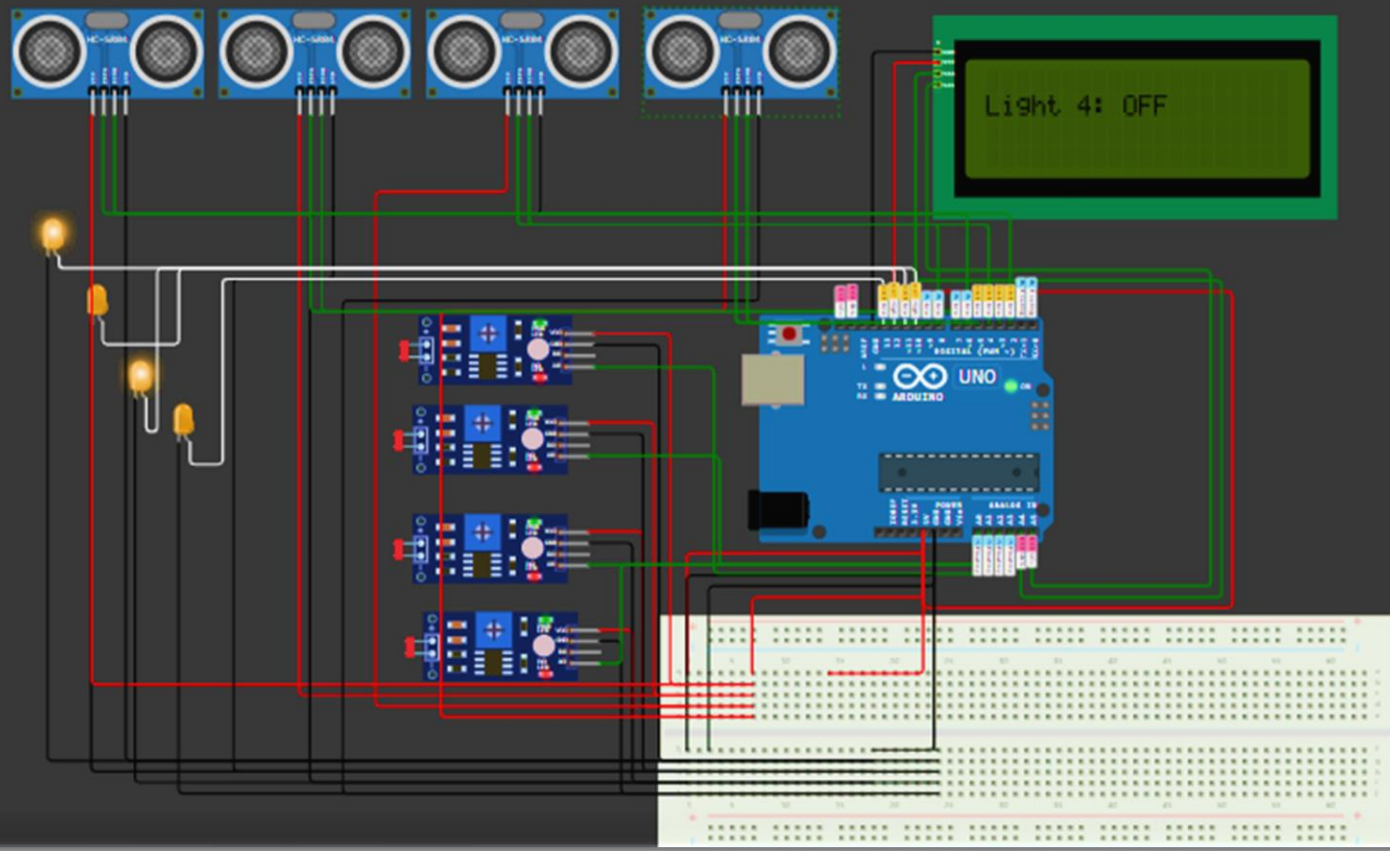


- If the ultrasonic sensor measures a distance of 220 cm, then the condition for turning **OFF** "light 4" is met. So, under this specific circumstance, "light 4" should be turned **OFF** according to the programmed conditions or logic.

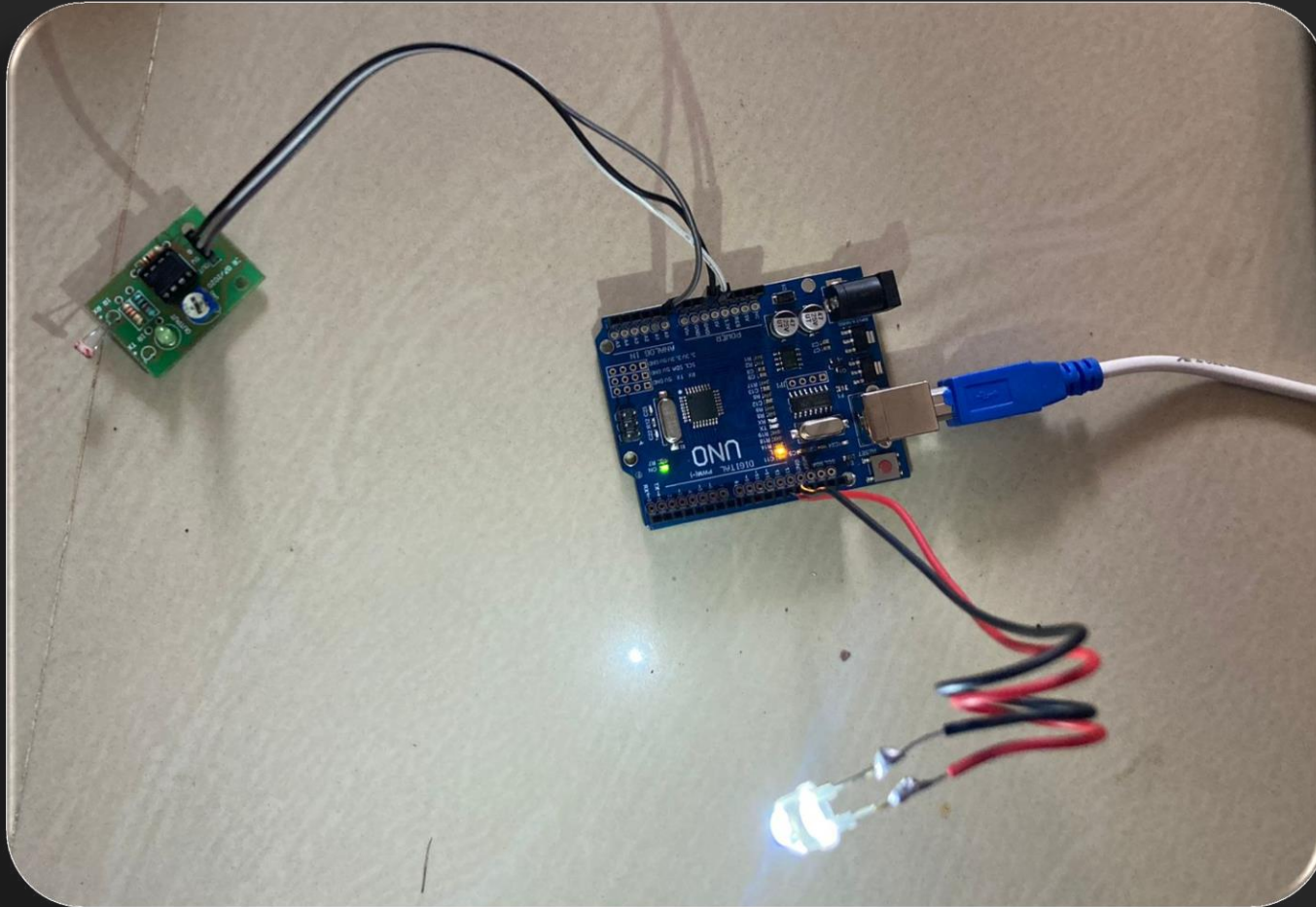
Simulation

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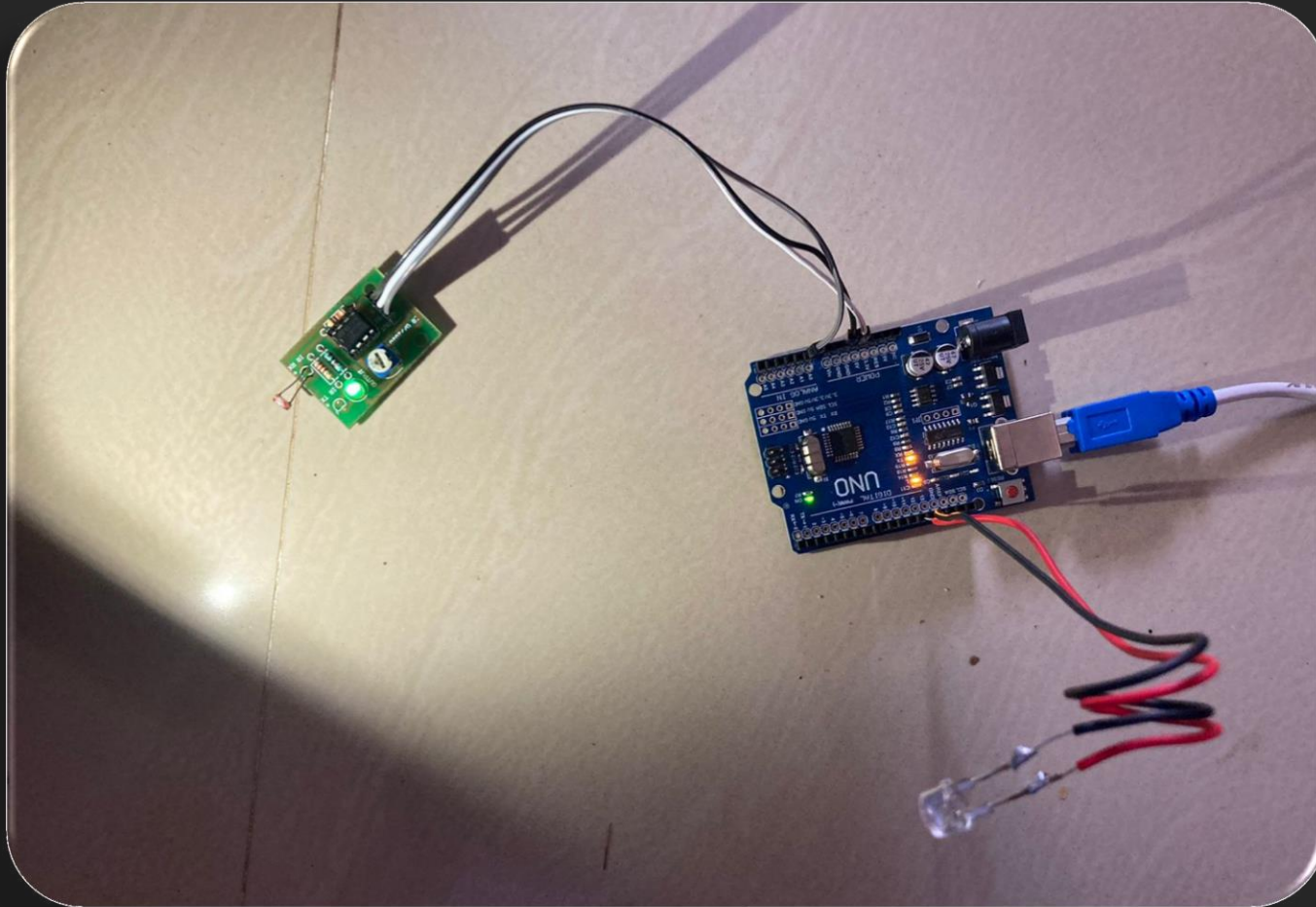
Editing Ultrasonic Distance Sensor
Distance: 220cm



When there is no light intensity, meaning it is dark, the Light Dependent Resistor (LDR) sensor becomes active, the LDR sensor detects this lack of light and triggers a response, causing the LED light to turn **ON**.



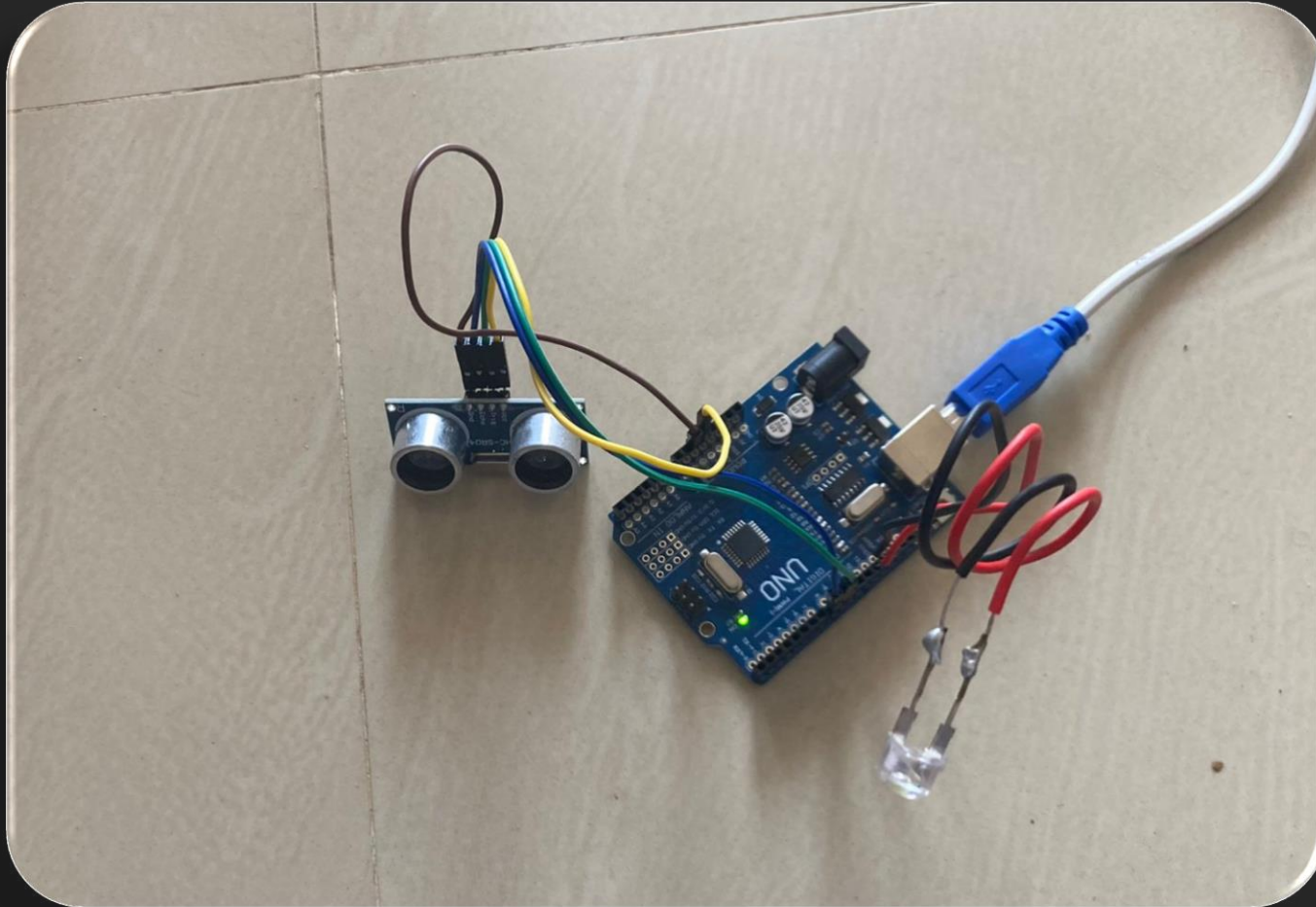
When there is light intensity, near the Light Dependent Resistor (LDR) sensor registers it, prompting a response that leads to the LED lights turning **OFF** condition.

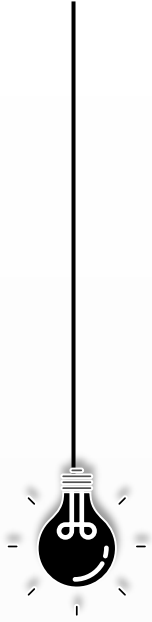
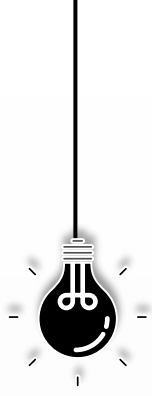
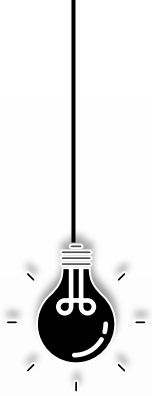


If an object comes near the ultrasonic sensor, it detects the object is presence and turns **ON** the LED lights.



If no object comes near the ultrasonic sensor, it detects this absence and subsequently turns **OFF** the LED lights.





REFERENCES



REFERENCES



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THANK

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