PoRtfolio

by Atharva Jadhav

2026

about *me*

Electronics and Telecommunication Engineering student with strong interest in hardware and PCB design

Hands-on experience in embedded systems using Arduino, 8051, and Raspberry Pi

Worked on real-world projects involving IoT, sensors, and automation systems



Skilled in circuit design, soldering, sensor integration, and hardware debugging

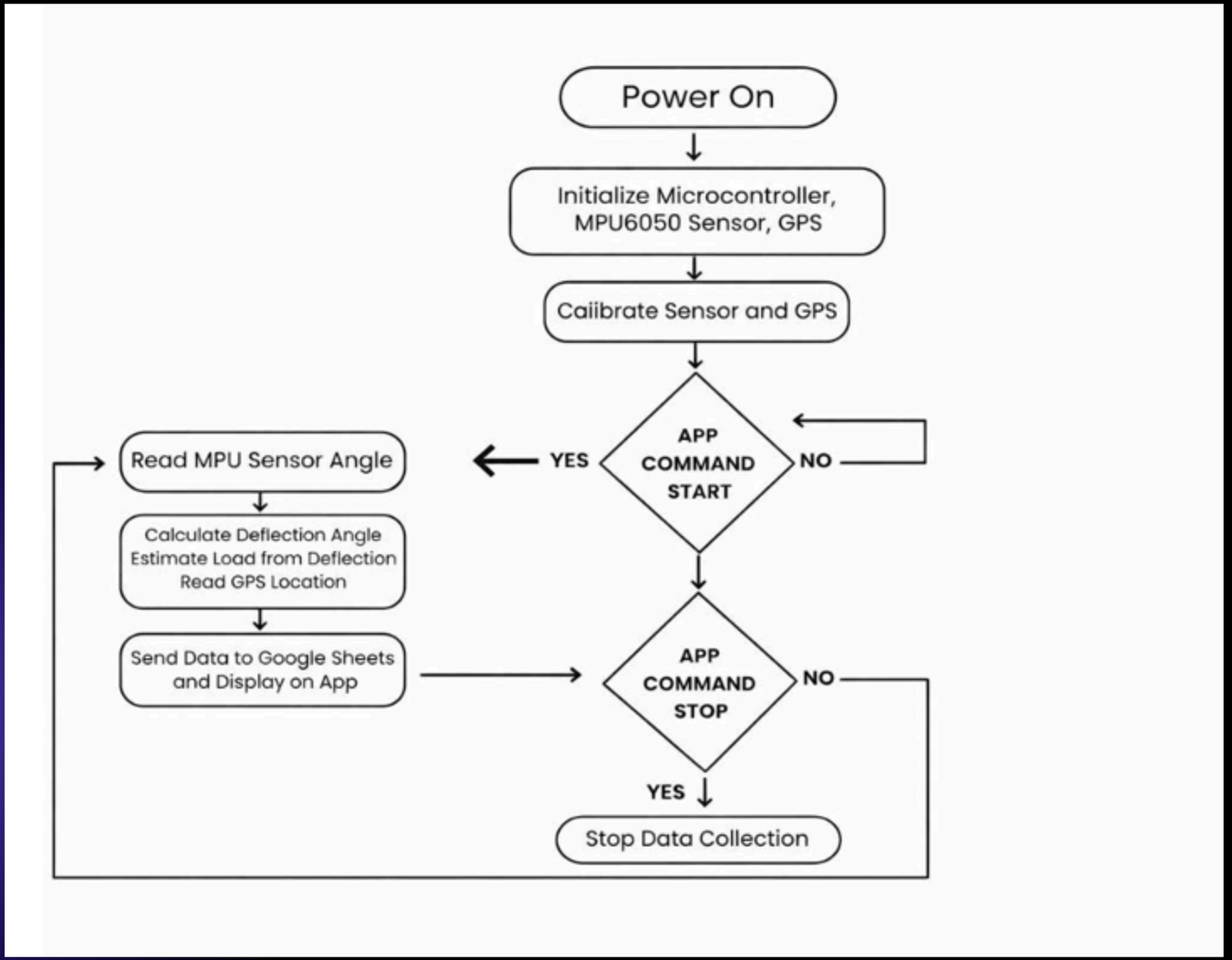
Familiar with tools like Proteus and basic PCB design concepts (currently learning KiCad)

Quick learner, problem solver, and eager to gain industry-level experience in PCB and hardware design

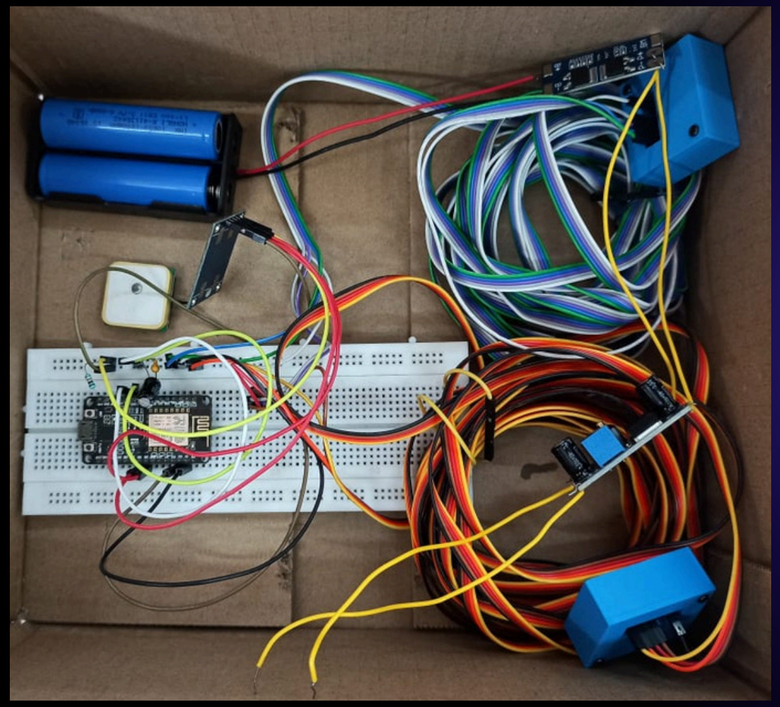
projects

IoT-based Vehicle Load Monitoring System

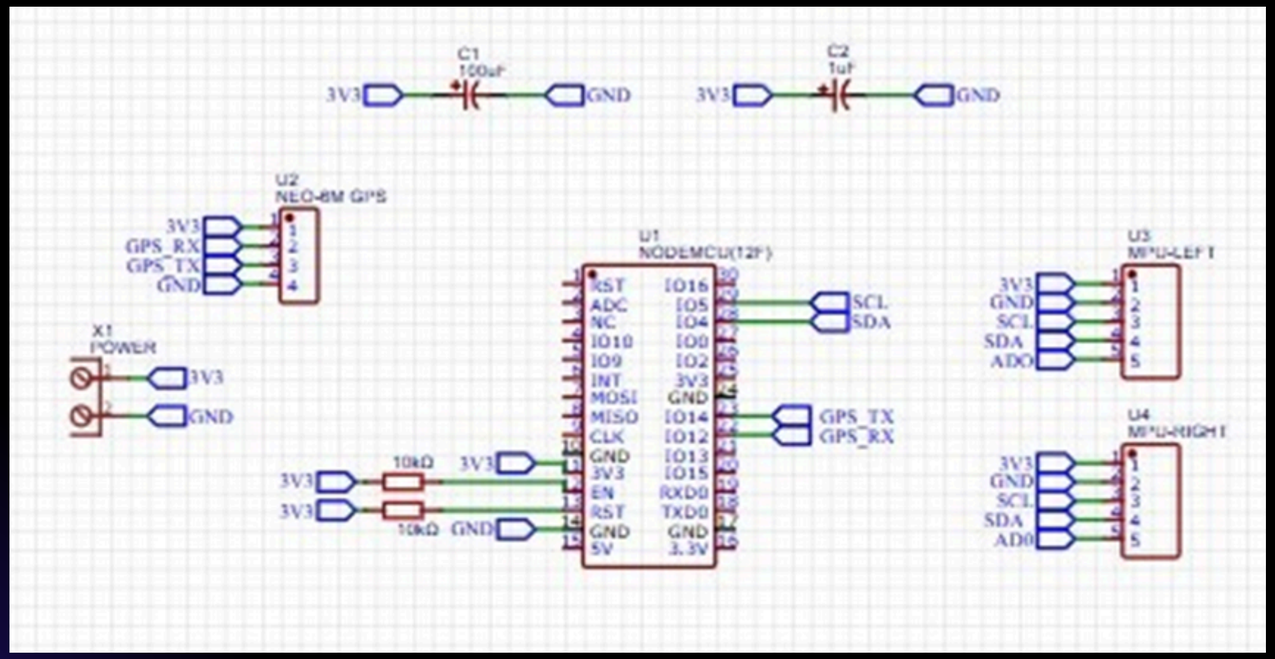
Research Lab Internship



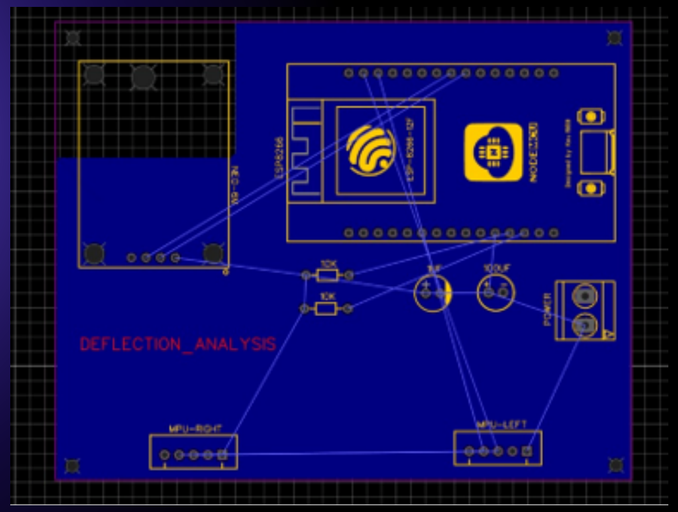
Flowchart

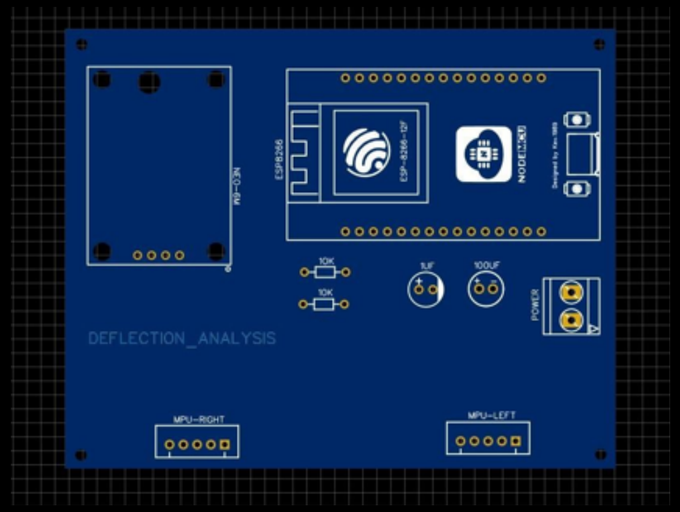


- Used ESP8266 + MPU6050
- Real-time data to Google Sheets
- Flutter app for control



PCB Design



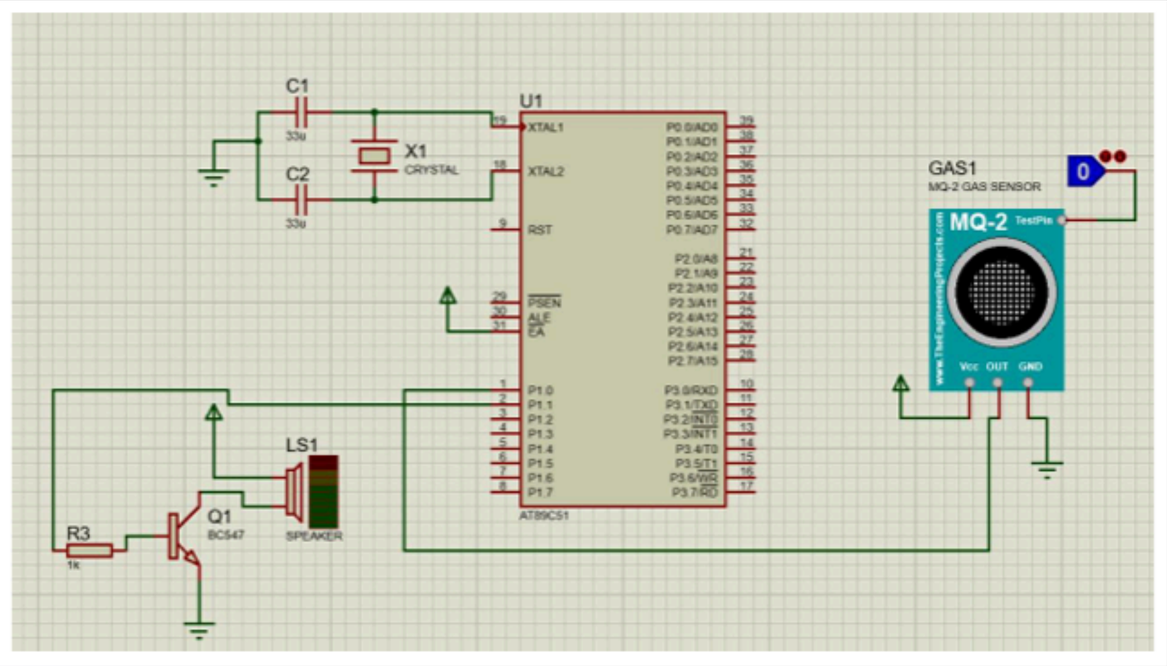


Mobile Application



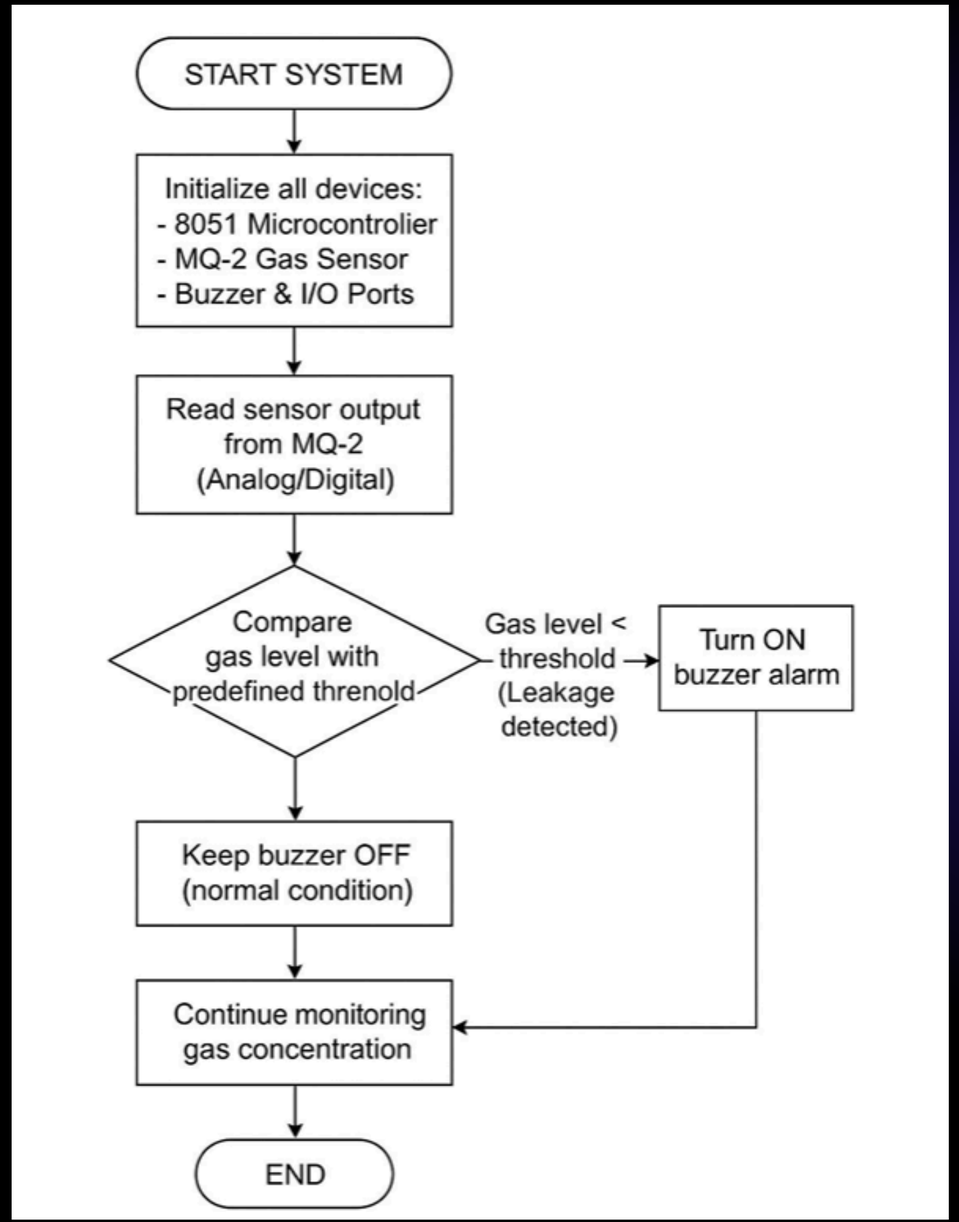
Gas Leakage System

Mini Project



Circuit Diagram

- System starts and initializes all components (8051, MQ-2 sensor, buzzer)
- Gas sensor continuously monitors gas concentration
- Output is read and compared with a predefined threshold
- If gas level exceeds threshold → buzzer is activated
- If normal → system continues monitoring

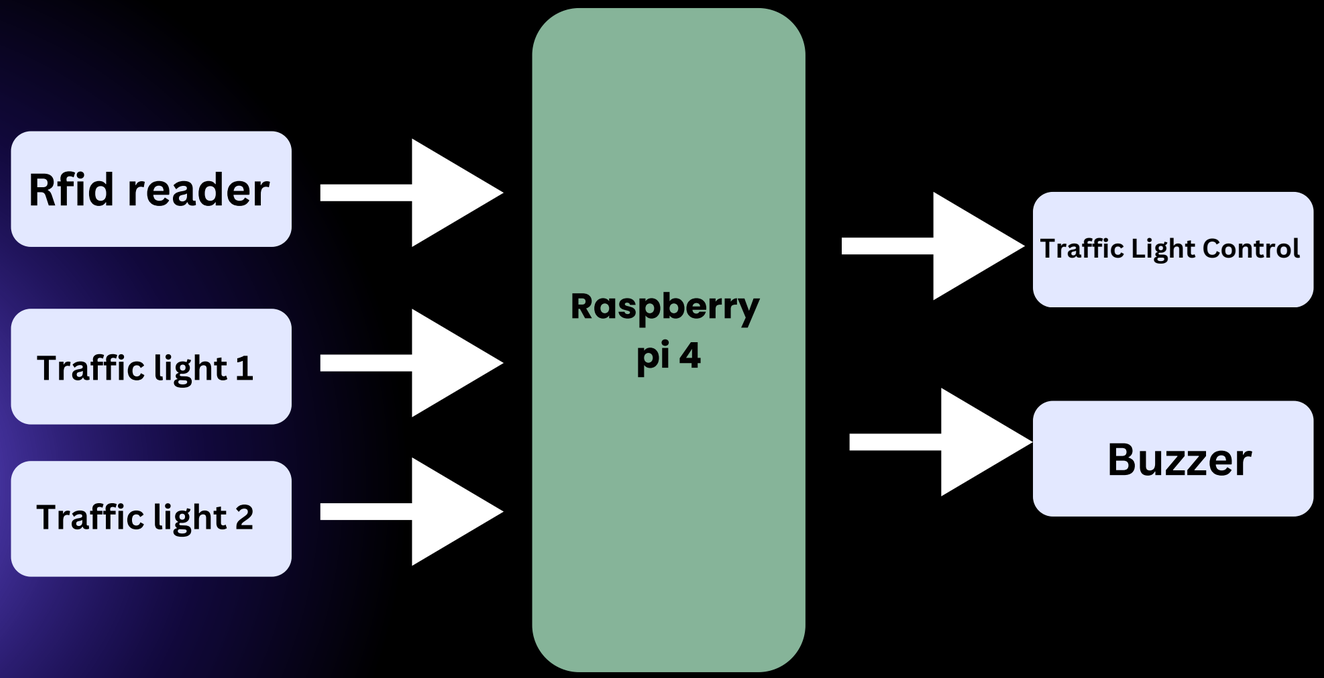


Flowchart

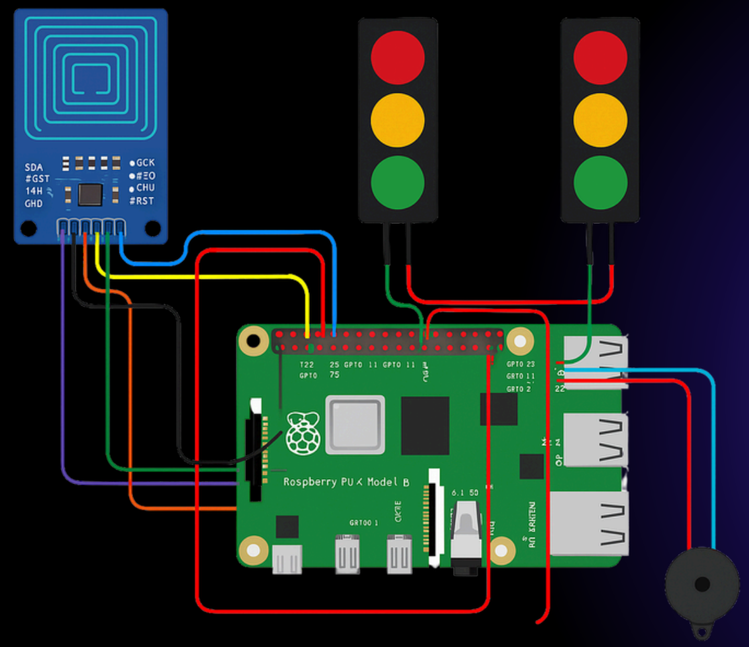
LIFE LANE

Smart Traffic Light System for Emergency Vehicles

This project is a smart traffic control system designed to give priority to emergency vehicles. An RFID reader detects the vehicle, and the Raspberry Pi processes the signal to control traffic lights. The system turns the signal green for the emergency lane and red for others. A buzzer is also activated to alert nearby vehicles.



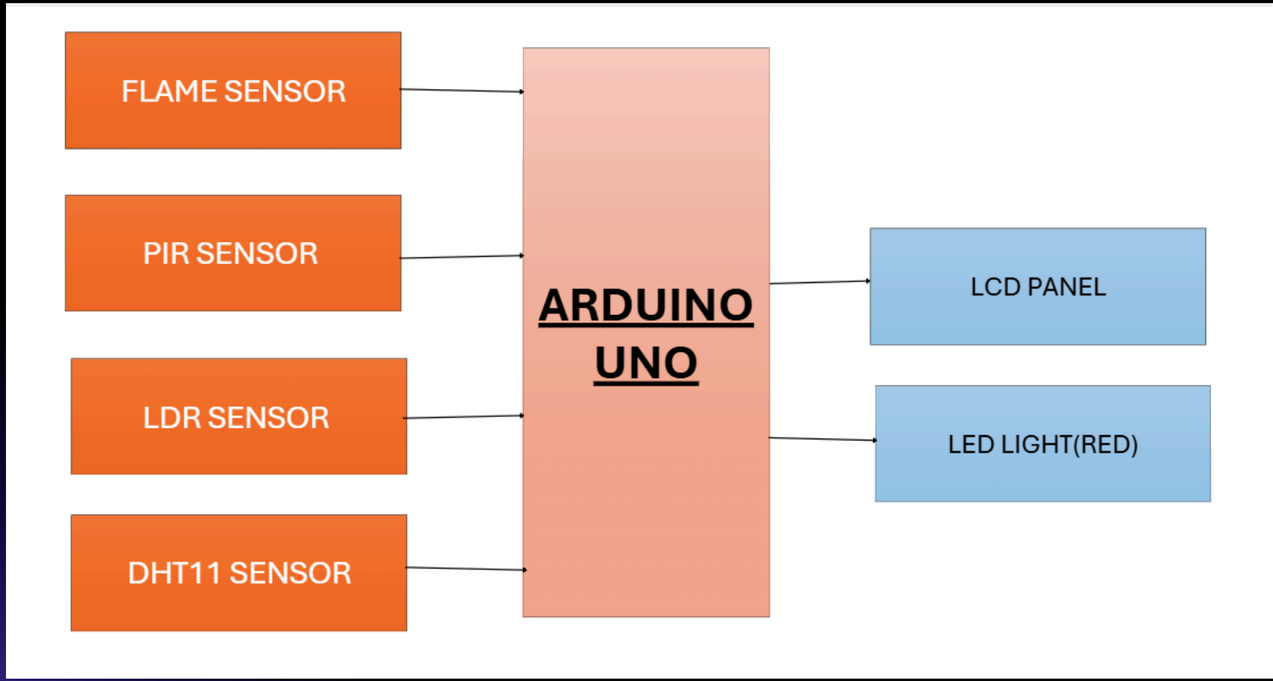
Block Diagram



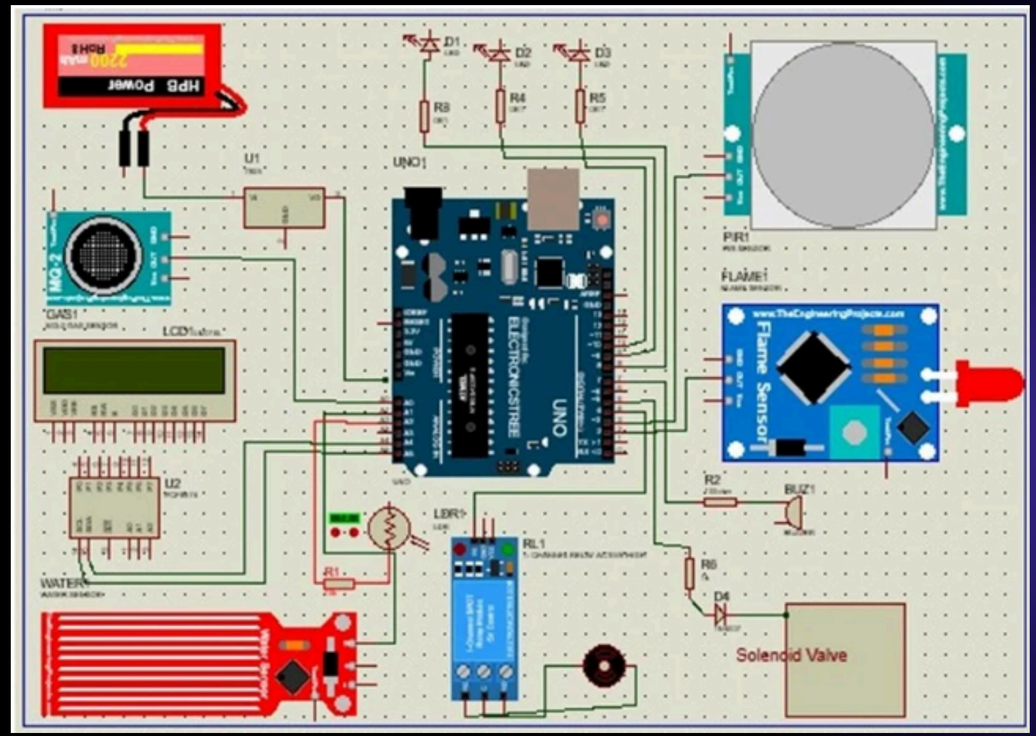
Circuit Diagram

When an emergency vehicle approaches, its RFID tag is detected by the reader. The Raspberry Pi processes this input and automatically controls the traffic signals. The respective lane is cleared by turning it green, ensuring faster movement. Other lanes remain stopped for safety.

CATTLE GUARDIAN



Block Diagram

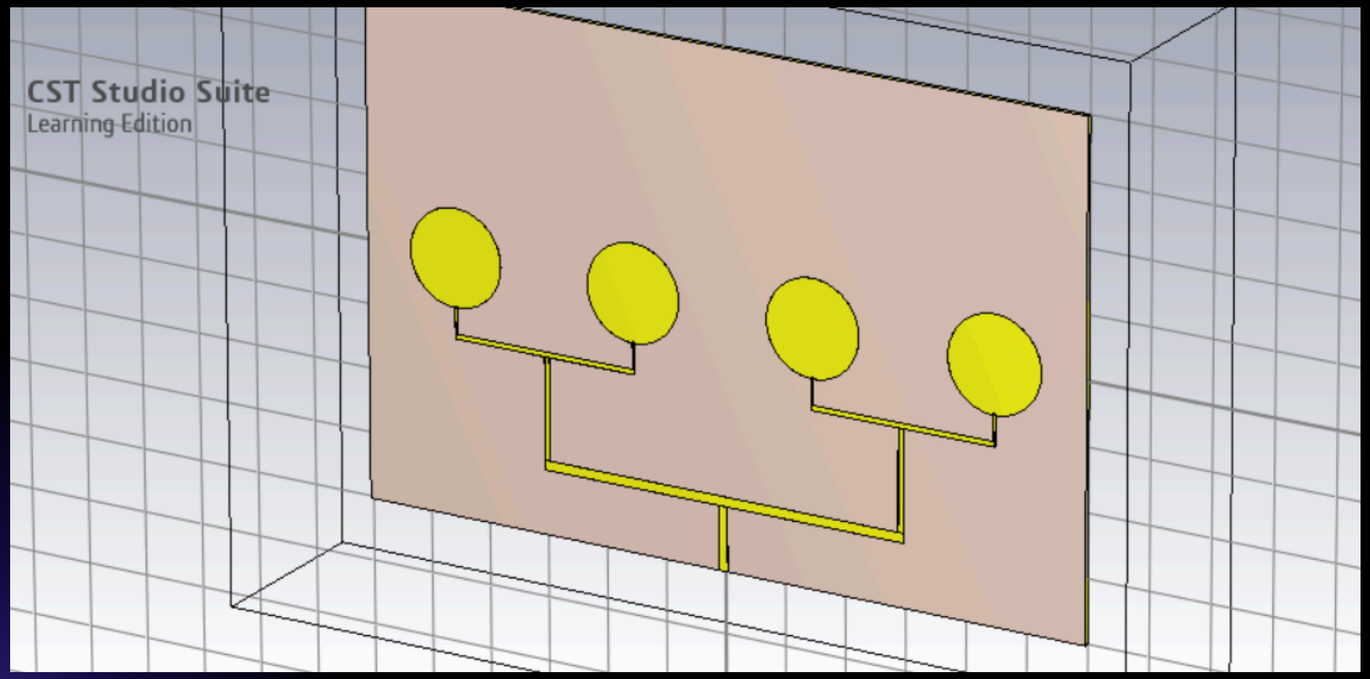


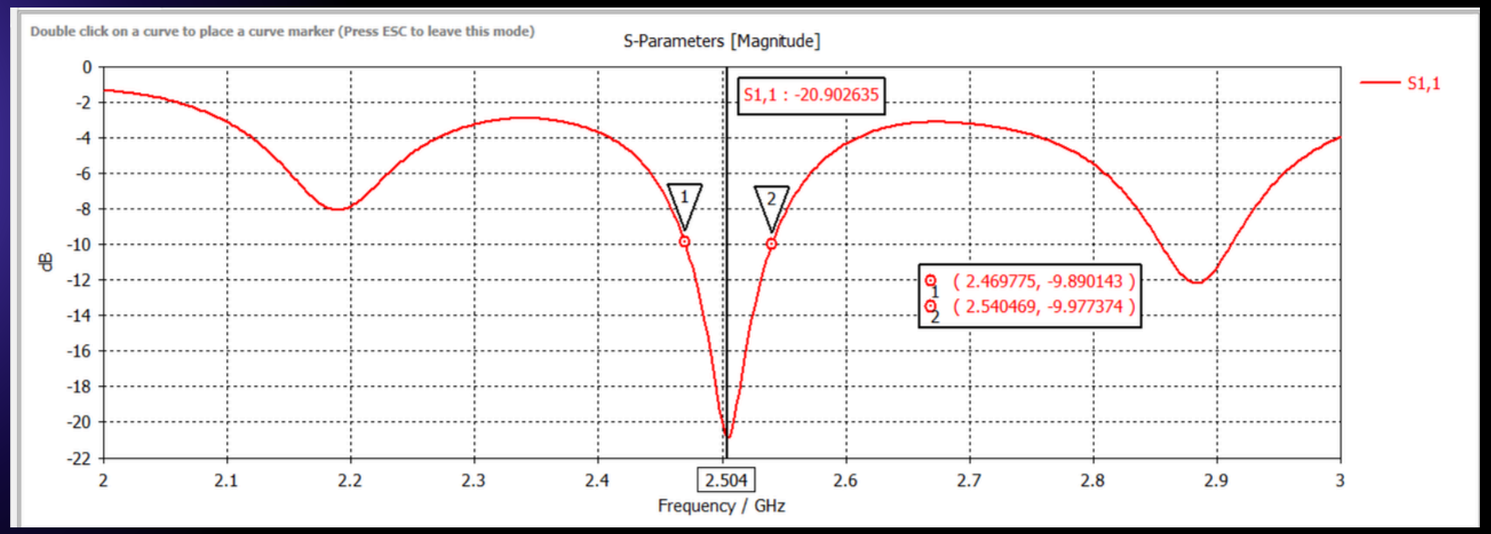
Circuit Diagram

Cattle Guardian is an IoT-based system designed to monitor cattle safety and environmental conditions. It uses multiple sensors like flame, PIR, LDR, and DHT11 connected to an Arduino Uno. The system detects fire, motion, light, and temperature changes in real time. Alerts and data are displayed using an LCD and LED indicators.

Sensors continuously monitor the surroundings of the cattle. If any abnormal condition like fire, unusual movement, or temperature change is detected, the Arduino processes the data. The system then triggers alerts through LEDs or display. This ensures safety and real-time monitoring of cattle.

4-ELEMENT CIRCULAR ARRAY PATCH ANTENNA





- Designed and simulated an antenna using CST Microwave Studio.
- Analyzed parameters like radiation pattern, gain, and return loss.
- Understood electromagnetic behavior and frequency response.
- Gained experience in simulation-based design and analysis.