KLE Technological University

Creating Value

Leveraging Knowledge

Field Visit Report on the Course Project: Smart Traffic Light with Adaptive Timing

LINEAR INTEGRATED CIRCUITS (19EECC203)

By

Name	Roll No.
1. Amit Kumar	220
2. Bhoomika Gowda	218
3.Venkatesh Maraddi	233
4.Samhita Jajee	234

Under the guidance of

PROF. SHRADDHA HIREMATH

KLE TECH.

KLE Technological University

Creating Value

Leveraging Knowledge

1. SENSOR CHARACTERIZATION DATASHEET

These sensors typically operate in wavelengths between 0.7 to 14 micrometres, making them ideal for various applications.

Additionally, many modern IR sensors come equipped with adjustable detection ranges and output signals, providing flexibility in designing systems that meet specific requirements. Some models even include built-in filters to minimize interference from ambient light sources.

Board Size	3.2 x 1.4cm
Working voltage	3.3 to 5V DC
Operating voltage	3.3V: ~23 mA, to 5V: ~43 mA
Detection range	2cm – 30cm (Adjustable using potentiometer)
Active output level	the output is “0” (Low) when an obstacle is detected

2. RENEWABLE ENERGY SOURCE GENERATION PROCESS AND USAGE

Generation Process:

Photovoltaic (PV) Systems:

Operation: Solar panels convert sunlight directly into electricity.

Components: Include inverters, batteries, and monitoring systems.

Concentrated Solar Power (CSP):

Technology: Uses mirrors or lenses to concentrate sunlight.

Usage:

Electricity Generation:

Grid-Connected: Feeds power into the grid.

Off-Grid Systems: Provides power in remote areas.

Heating & Cooling:

Water Heating: Uses solar collectors.

Space Heating/Cooling: Controls building temperatures.

KLE TECH.

KLE Technological University

Creating Value

Leveraging Knowledge

Lighting:

Daylighting: Maximizes natural light.

Solar Lights: Outdoor lighting powered by solar panels.

Industrial & Agricultural:

Manufacturing: Powers industrial processes.

Irrigation & Greenhouses: Solar-powered solutions.

Transportation & Emergencies:

Solar Vehicles & Generators: Provide power.

Advantages & Challenges:

Advantages: Renewable, clean, cost-effective.

Challenges: Initial cost, intermittency.

Future Trends:

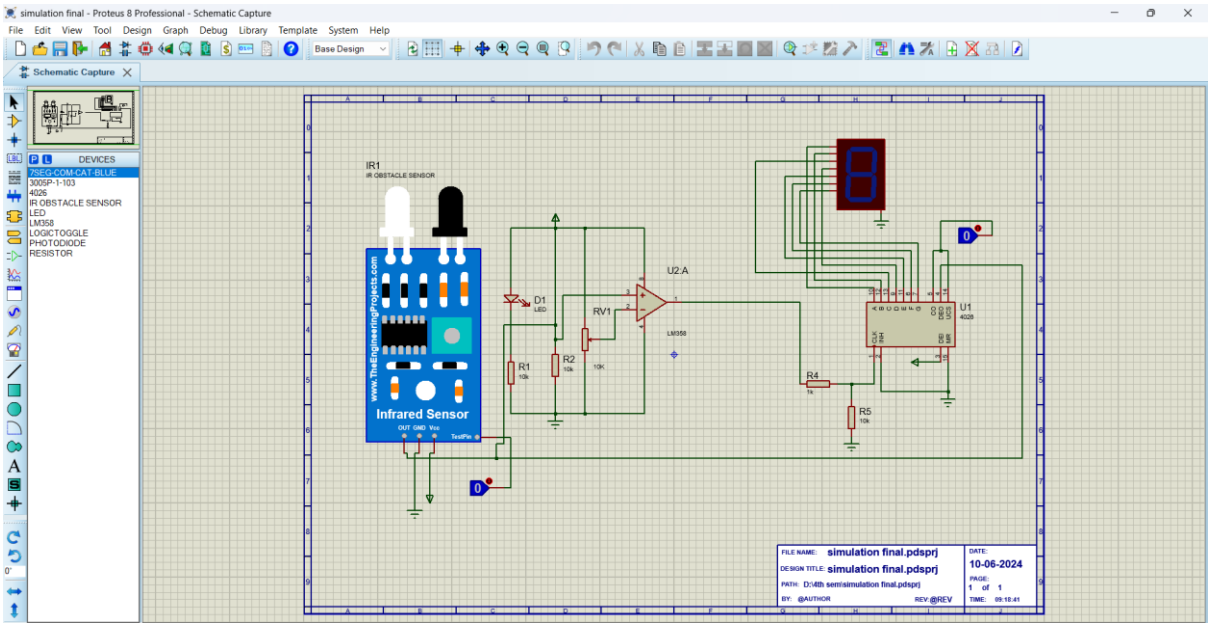
Technological Advances: Efficiency, cost reduction.

Integration & Policy Support: Smart grids, incentives.

Solar energy is a versatile and sustainable solution for diverse energy needs.

KLE Technological University
Creating Value
Leveraging Knowledge

3.SIMULATION



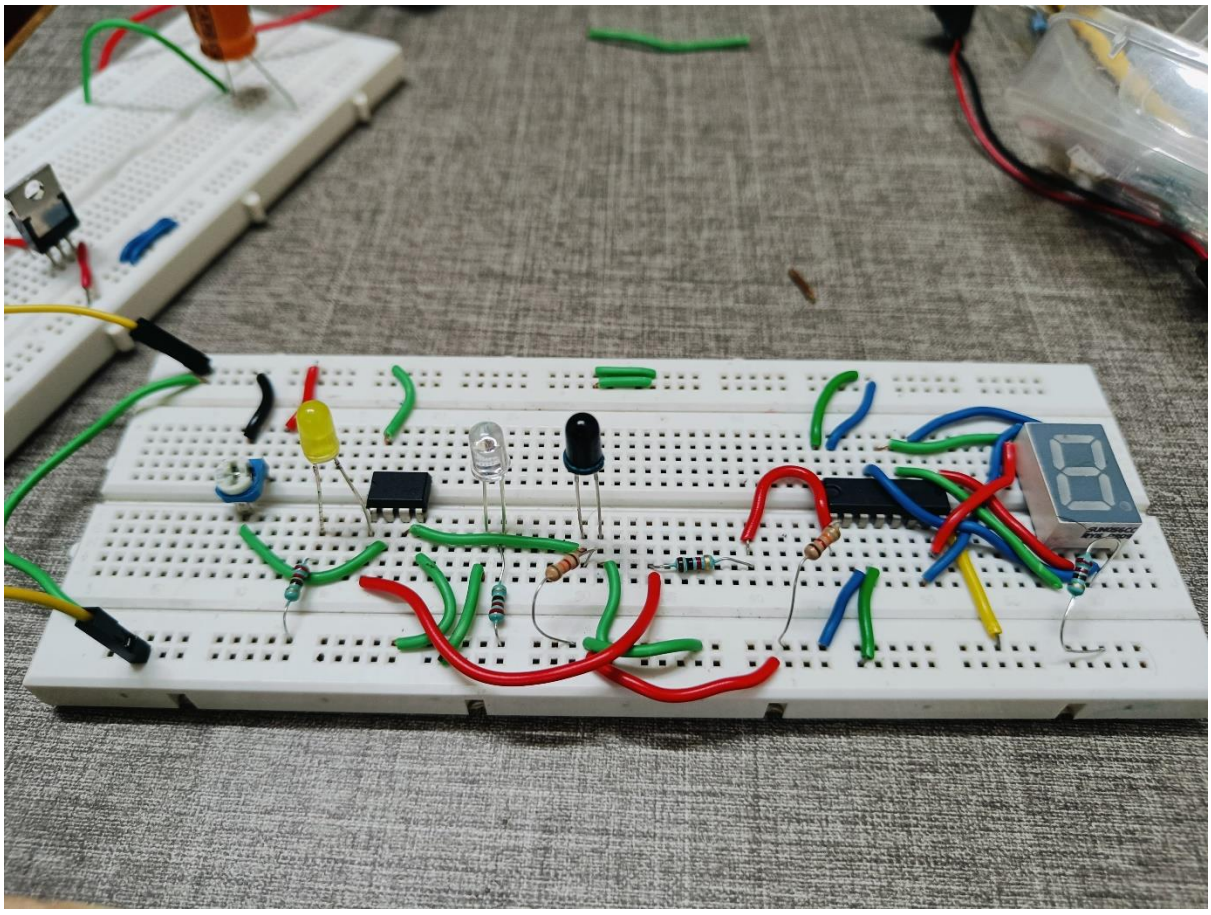
KLE TECH.

KLE Technological University

Creating Value

Leveraging Knowledge

4.BREADBOARD IMPLEMENTATION



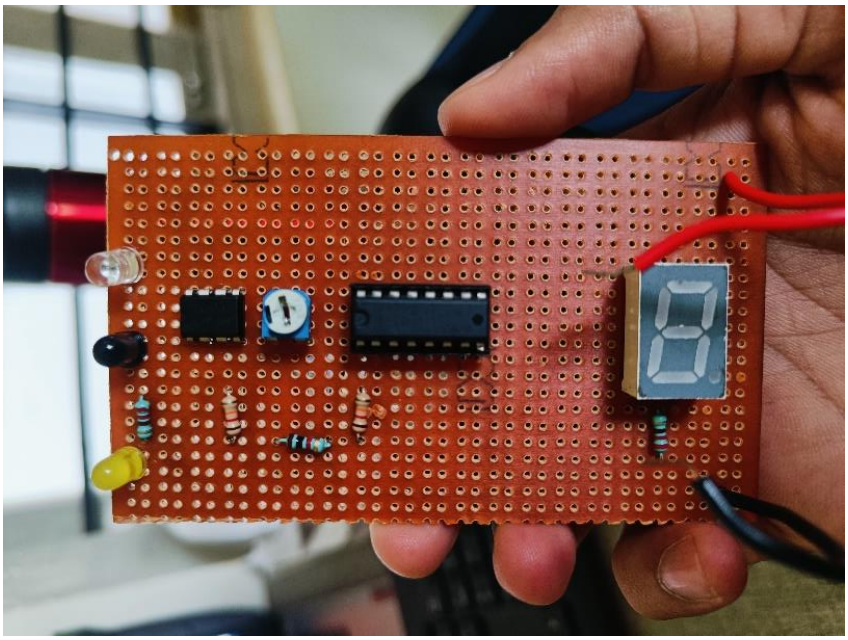
KLE TECH.

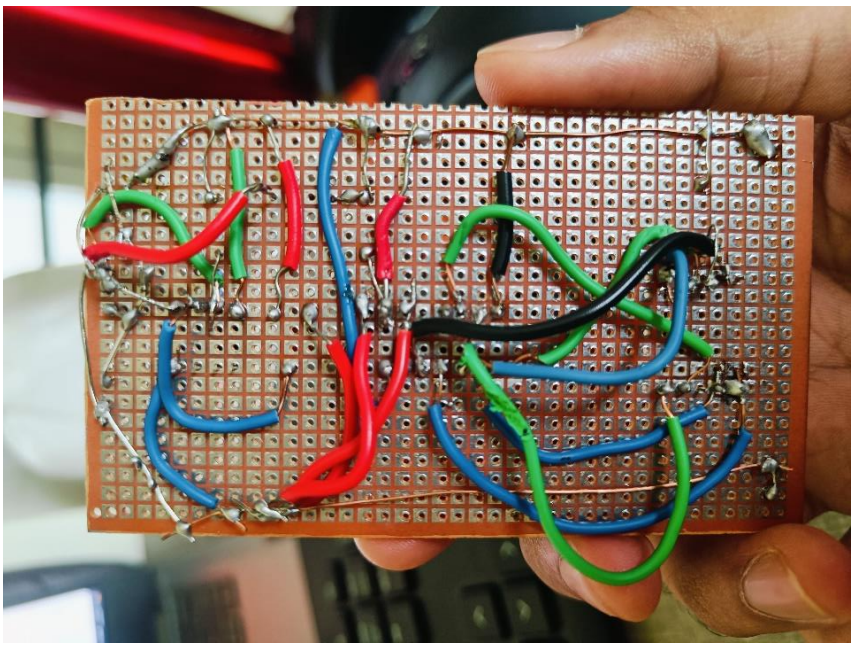
KLE Technological University

Creating Value

Leveraging Knowledge

5.PCB IMPLEMENTATION





6. Conclusion

a. The industrial visit provided valuable insights into the development and implementation of data acquisition systems, particularly in the field of traffic management.

b. Self-powered data acquisition systems offer a sustainable solution for monitoring and controlling traffic flow, contributing to improved efficiency and reduced environmental impact.

c. Based on our visit experience, we recommend the adoption of self-powered technologies in traffic management systems to enhance sustainability and operational effectiveness.


KLE TECH.
KLE Technological University
Creating Value
Leveraging Knowledge

THANK YOU