AUTOMATED LIGHT INTENSITY BASED ON WEATHER CONDITIONS IN PUBLIC PLACES

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Contents

Introduction

- Automated public lighting employs sensors and software to dynamically control streetlights based on real-time data, distinguishing it from manual operation.

- This project saves energy and costs up to 50 percent compared to traditional methods and It improves safety by providing better illumination, helping deter crime and enhancing security in communities.

Literature Survey

Sno	*NameOfthePaper*	*Author*	*Description*
1.	SMART STREET LIGHTING AND WEATHER MONITORING SYSTEM FOR SMART CITIES	Mr. Keval Sunil Mehta, Mr. Nill Paresh Shah, Mr. Parv Tushar Maru, Mr. Harish Motekar	This paper highlights the significance of street lighting for public safety and suggests cost-effective smart lighting solutions that combine wireless technology, low-cost LEDs, and environmental sensors to improve efficiency and reduce expenses.
2.	IOT based Street Light Controlling Mechanism	Rana Majumdar, Abhishek Srivastava, Devesh Tulsian, Ved P Mishra	This paper presents an IoT-based smart street light system that adjusts lighting based on environmental factors like light intensity, temperature, and humidity. It also explores the use of solar panels for power efficiency.

Sno	*NameOfthePaper*	*Author*	*Description*
3.	Smart Street Light Management System with Automatic Brightness Adjustment Using Bolt IoT Platform	Sk Mahammad Sorif, Dipanjan Saha, Pallav Dutta	This paper presents a Bolt IoT-based streetlamp control system designed to conserve energy and reduce manpower by using efficient LEDs with LDRs for intensity control and IR sensors for vehicle-driven illumination.

Table: Literature Survey

Problem Statement

- Existing public lighting systems waste energy and are inefficient.
- Weather conditions affect visibility and safety, but current systems do not adjust accordingly.
- Manual maintenance inspections are slow and lead to extended downtime.
- Automated Light intensity based on weather conditions in public places system results real-time control, energy savings, and quick defect identification.

Proposed Method

- The proposed Automated public lighting system, that are centrally controlled by IOT would facilitate dynamical adjustment of intensity based on weather conditions and provide a record of the consumption.
- Maintenance of public lighting systems is crucial, IoT-based Automated public lighting systems offer real-time monitoring and quicker defect identification, minimizing downtime and enhancing system reliability by using communication and network sensors.
- This would dramatically result in lower operating costs and would aid in low downtime of failed lighting systems as the defective locations can be identified.

Modules and Functionalities of modules

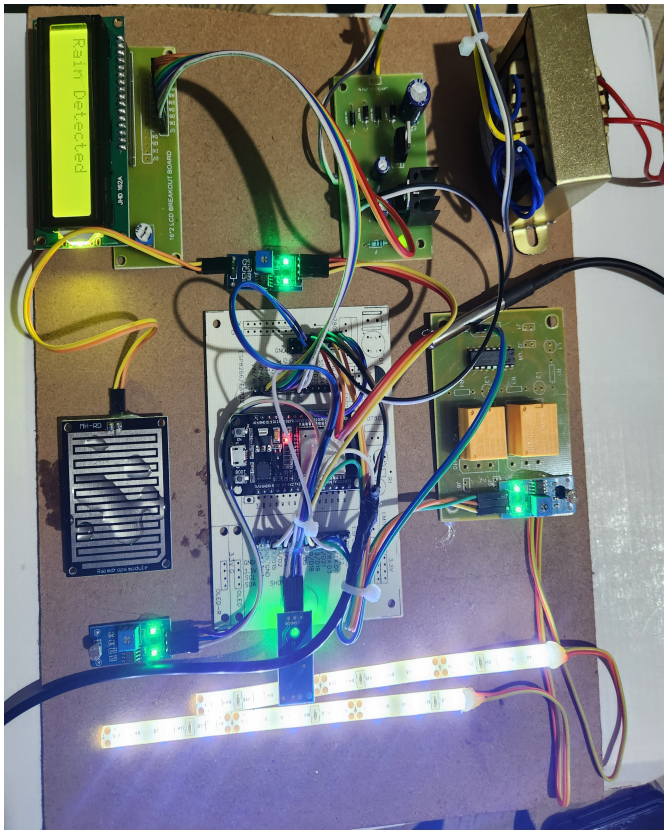
- Controlling light intensity Module
  - Integrating sensors and algorithms to detect weather conditions.
  - This feature enhances safety and cost by controlling light intensity.
- Maintenance Module
  - Integrating communication and network sensors defective locations can be identified.
  - This feature enhances real-time monitoring and quicker defect identification, minimizing downtime.

Implementation status

Module	***Description***	***Status***
Module 1	Controlling light intensity Module	Completed
Module 2	Maintenance Module	Completed

Implementation

- When it is exposed to rain conditions it detects moist (rain)and gives more intensity of light.
- when the climate conditions are sunny it gives low brightness of light.



Results

- It helps to give the result according to whether conditions.
- By giving low intensity of light in summer and high intensity of light in winter the lots power is saved.

Conclusion and Future Scope

- streetlights using smart sensors save energy, make streets safer, and cut costs.
- By adjusting brightness based on weather and swiftly detecting issues, they save money and ensure better reliability. Future improvements might involve smarter maintenance and eco-friendly energy use for sustainable cities.
- Future improvements might involve smarter maintenance and eco-friendly energy use for sustainable cities.

References

- S. M. Sorif, D. Saha and P. Dutta, "Smart Street Light Management System with Automatic Brightness Adjustment Using Bolt IoT Platform," 2021 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), Toronto, ON, Canada, 2021, pp. 1-6, doi: 10.1109/IEMTRONICS52119.2021.9422668.

- R. Majumdar, A. Srivastava, D. Tulsian and V. P. Mishra, "IOT based Street Light Controlling Mechanism," 2019 International Conference on Computational Intelligence and Knowledge Economy (ICCIKE), Dubai, United Arab Emirates, 2019, pp. 433-436, doi: 10.1109/ICCIKE47802.2019.9004248.

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Thank you