

# Automated Street Lightning System Using IOT

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## Abstract:

Automatic Street Light Control System is a simple yet powerful concept, which uses transistor as a switch. By using this system manual works are 100% removed. It automatically switches ON lights when the sunlight goes below the visible region of our eyes. This is done by a sensor called Light Dependant Resistor (LDR) which senses the light actually like our eyes. It automatically switches OFF lights whenever the sunlight comes, visible to our eyes. By using this system energy consumption is also reduced because nowadays the manually operated street lights are not switched off even the sunlight comes and also switched on earlier before sunset. In this project, no need of manual operation like ON time and OFF time setting.

### Keywords —

Resistor, Transistor, Saturation, Energy, Automation, Consumption, Wireless, Conventional, Sensor

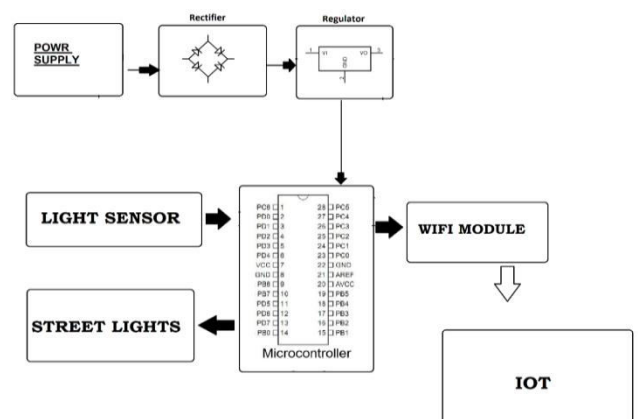
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## I. INTRODUCTION

This new system is a result of Thinking about the huge power consumption of the present lighting system that consume over world's 79.3% of electricity and also the human intervention. This IOT based Street light automation is a project on smart and automated light control to control the problem of power consumption and usage of the streets manually, late in the night. Street lights today are getting replaced by LED street lighting system, which reduces the power consumption to great extent. Also, this system remove the human intervention results in the fully automated street light system. Another advantage of LEDs is the

ease with which strength of the light can be controlled. Hence, automation and movement detection based street light control can be designed easily and operable.

## II. BLOCK DIAGRAM:



### **III. PROPOSED SYSTEM:**

So there were the several problems which need to be worked upon in former system. This can be done by creating a new system which is Automated, Energy conserving and cheap. Our system works in a similar fashion first, it sense the Infrared from the surrounding and check whether the lights needs to be ON or not as per the intensity value. This system will eliminate the system of manual control as the system will cause to light up when the infrared value become less than our defined value. Also the light will automatically switch OFF when detected value of infrared become greater than the defined value.

This system works in 2 forms, first, for highways second for the Streets. For highways the lights remain OFF as long as the motion of the object is detected. If motion is detected the light will be in ON state and Glows for specific time interval. In second form the lights does not remain in OFF state, instead they remain ON but in less intensity. This is because the streets needs light more frequently than that of highway. Again if the motion is detected here the intensity of light become greater for the particular time interval. This is dimming effect created by our system.

Here many system uses the IR sensors or the Ultra sonic sensor, these components may be good for the small area purpose. But when we are talking about the big area like 6 lane highways then they are not effective. So instead of these our system have Microwave sensor, this sensor radiates microwave 360 degree all over till 11 meters and detects the motions. Also, it is used because of its robust design. Thus our system not only reduce the Energy usage by the street lights but also make it smart enough to operate.

### **IV. ADVANTAGES:**

1. Automatic Switching of Street lights.
2. Maintenance Cost Reduction.
3. Reduction in CO<sub>2</sub> emission.
4. Reduction of light pollution.
5. Wireless Communication.
6. Energy Saving.
7. Reduction of manpower.

### **V. DISADVANTAGES:**

1. Manual switching off/on of Street Lights.
2. More Energy Consumption.
3. High expense.
4. More manpower.

### **VI. APPLICATION:**

The aim of an automated streetlight management system using IoT is the conservation of energy by reducing electricity wastage as well as to reduce manpower. The project uses Light Emitting Diodes (LED) that do not utilize a large amount of electricity to restore the power-consuming conventional HID lights.

### **VII. FUTURE SCOPE:**

The above project we can develop solar street light system with Automatic street light controller. The system can be powered from a battery, which can be charged during day time by harvesting the solar energy through a solar cell. The solar energy harvested from sunlight can be.

### **VIII. CONCLUSION:**

The important aim of this paper is to save the current. It is mainly used to protect the power efficiently. Using sensors to save the power energy without any waste. Safe street lighting for peaceful vehicle movements. This SLS suits for Small Street to highway roads. This system can be used in public places also like hotels, industries, etc.

It is control the overflow of current. Manpower not required in this system. This SSSLs are mainly used in urban areas and highways to reduce the power wastage to save the current.

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#### **IX.REFERENCES:**

1. International Journal of Advanced Research in Applied Science and Technology ISSN: 2456-1959 Vol.3, No.11, November 2017, Smart Street Lighting System using IoT, Ms. M. Kokilavani, Dr. A. Malathi.
2. International Research Journal of Engineering and Technology (IRJET), Volume: 07 Issue: 03 | Mar 2020, Smart Street Light System using IoT Dr.A.S.C.S.SASTRY1, K.A.S.K. Bhargav2, K. Surya Pavan3, M.Narendra4.
3. ; International Journal of Advance Research, Ideas and Innovations in Technology, Automated street lighting system using IoT, ISSN: 2454-132X Impact factor: 4.295 (Volume 4, Issue 3), Prashanth Keni, Shaik Mohammed Wajid, Syed Zuber Ahmad, Rahimunnisa, Shruthi K.
4. International Journal of Trend in Research and Development, Volume 6(2), ISSN: 2394-9333, IoT Based Street Light Automation System 1 Jeetendra Swami, 2 Himanshu Patel, 3 Krishna Patel and 4Ms.Nisha Bhalse,
5. International Journal of Science, Engineering and Technology Research (IJSETR), Volume 5, Issue 2, February 2016, A review paper on "IOT" & It's Smart Applications, Vandana Sharma1 , Ravi Tiwari2
6. International Journal of Current Engineering and Technology, Smart Security Solutions based on Internet of Things (IoT), Chirag M. Shah<sup>À\*</sup> , Vamil B. Sangoi<sup>À</sup> and Raj M. Visharia<sup>À</sup>, Vol.4, No.5 (Oct 2014).
7. International Journal of Scientific Research in Computer Science, Engineering and Information Technology, IOT Based Water Quality Monitoring System, Mourvika Shirode, Monika Adaling, Jyoti Biradar, Trupti Mate, Volume 3 | Issue 1 | ISSN : 2456-3307.
8. International Journal of Advance Research in Computer Science and Management Studies, A Survey on the Smart Homes using Internet of Things (IoT) Vishwajeet H. Bhide, Volume 2, Issue 12, December 2014.
9. International Journal of Advanced Computer Science and Information Technology (IJACSIT) Vol. 3, No. 3, 2014, Wireless Sensor System According to the Concept of IoT - Internet of Things, Juan Felipe Corso Arias, Yeison Julian Camargo Barajas, Juan Leonardo Ramirez Lopez

