

# Vehicle Movement based Street Lights

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**Abstract** - The project titled "Vehicle Movement Based Street Lights" is developed with the future goal to save the light energy. The main aim of this project is to save energy by putting on the lights of the system when only the system detects movement of vehicle. When vehicle pass the system switches on the street light ahead of the vehicle and switches off the trailing lights simultaneously. In these in system to detect movement of vehicles, sensors are used. The system automatically switch on the lights that are ahead of the vehicle detected and as soon as the vehicle moves ahead, the street lights are switched off. This is better than the existing system where the street lights are kept on always unlike this system where the street lights are put on only when movement of vehicle is detected which helps in saving a lot of energy.

**Key Words:** IR sensor , LDR Sensor , LED Bulbs , Arduino kit

## 1. INTRODUCTION

In this project basically we use street lighting to detect vehicle when it pass from led street bulbs and it is one of the important parts of a city's where the main function is to switch off the streets lights during day time. In the previous time the number of street lights are in the town and city only and they were very small and Therefore, the street lamps of light are relatively simple but with the development of urbanization, the number of street lamps that are increased rapidly with high traffic density. There are several factors need to be considered in order to design a good street lighting for the human being therefore such as night-time safety for city public members and road users, provide public lighting at cost effective and this is very helpful for the public place at night time and it is called as first generation of the original street light. This method is using high pressure sodium lamp in their system. It can be seen that this method is widely used in the country nowadays.

### 1.1 Proposed system architecture:

This system is developed using Arduino along with various sensors sensing the vehicle. LDR is used to automatically switch ON the street lights when the sunlight goes below the visible region of our eyes and switches OFF the streetlight when some amount of sunlight is available. LDR is used to identify the difference between day and night. This system should have to turn ON at night time and remains OFF at day time and this is achieved with the help of LDR. To sense the vehicle IR sensors are used. Pair of IR transmitter and receiver situated on both sides of the road detects vehicles and give command to control unit to turn ON/OFF block of

street light. When vehicle or any other object is sensed by IR sensor, then the street lights will glow. And if vehicle or any other object is not detected by IR sensor, then the street lights will remain in OFF state. The control unit used here is Arduino.

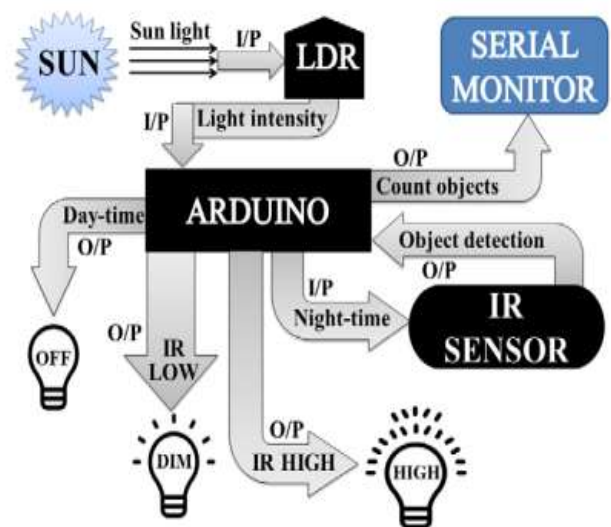


Fig 1. SYSTEM ARCHITECHTURE

## 2. EXPERIMENTAL RESULT:

Fig no1:



Fig no 2:



### 3. FEATURES

1. Simple Code.
2. Easy to understand.
3. Helpful for public places.
4. Street Light that Glows on Detecting Vehicle Movement.

### 4. Advantages

1. Easy integration into existing system.
2. Cost Saving.
3. Electricity conserving.
4. Automated system eliminating human interference.
5. Simple application into various public lighting solution.
6. Easy upgradable.

### 5. FUTURE SCOPE

In future we suggest to use this technology in lighting solutions for public places especially where unnecessary lighting remains on during night or in street lights which remain on when no one is around. Because integration cost is low. Maintenance cost of this technology is also very low, or may even be similar or less compared to the current manual or timer based High Intensity Lighting systems method which are economically as well as efficiency or energy wise high billing. Thus this method can help reduce economic and environmental costs greatly

### 6. CONCLUSION:

The project report entitled "Vehicle Movement Based Street Lights" has come to its final stage. The system has been developed with much care that its circuit and code are free of errors and at the same time it is efficient and achieves its main goal of energy conservation. The important thing is that the system is robust clever application of existing technology for a better efficiency. Also, the system is easily hardware or code upgradable. The entire system is secured, hardly differs from its practical integration. This system can very well be combined with various other technologies like solar capabilities counter ,identifier/verifier capabilities , signalling system , etc. and implemented soon.

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