STREET LIGHTING AND MONITORING FOR BRIDGE CRIMINAL ACTIVITIES

ABSTRACT:

Smart Street light is an intelligent control of street lights to optimize the problem of power consumption of the street, late in night. Conventional street lights are being replaced by Light Emitting Diode (LED) street lighting system, which reduces the power consumption. The focus of this project is to design a system of street lights controller to provide a reduction in power consumption. The prototype was designed by using Light Dependent Resistor (LDR), Infrared sensor (IR), battery and LED. The brightness of the lamps is being controlled in this project to reduce the power consumption. The dimming of the lamps depends on the speed of object motion detected such as pedestrians, cyclists and cars. The higher speed of moving object, the greater the level of intensity. For this idea, the innovation of street lights is not quite the same as conventional street lights that are controlled by timer switch or light sensor which automatically turns light on during sunset and off during sunrise. GPS are used to send the location and GSM are used to convey the unwanted action through the SMS. According to the study, motion detection devices may help to save up to 40% of energy per month. The IOT are used to store the updated information in the cloud.

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| EXISTING METHOD | PROPOSED METHOD |
| 1. Currently a manual system is used where the light will be made to switched ON/OFF.   DRAWBACKS   1. More energy consumption 2. High expense 3. More manpower | 1.Now moving to the proposed  system automated with the use of  light sensors, not just the saving of  energy and ensuring safety.  2.The IOT are used to monitor and  controlled in the process .  ADVANTAGES   1. Automatic switching of street lights 2. Energy saving 3. Avoid accident and unwanted   Incident in that area. |

WORKING PRINCIPLE

In this proposed method, Arduino UNO microcontroller is used to interface with the sensors and to the communication devices. The LCD is used to update the latest information in the LCD. The Smart Street Light System proposes the installation of the wireless system to remotely control and track the consumption of energy of the street lights. This helps take appropriate measures and reduce energy consumption using power conditioning and control. The system must be installed on the light pole. It consists of a Microcontroller, various sensors. The controller installed on the pole senses the object and the light around the region and controls the intensity of LED’s accordingly. The Smart System can be operated both manually and automatically. The Ultrasonic sensor is used to find distance based applicable work. The GPS are used to detect the position and The GSM are used to transfer the information to control room. RTC is using in this concept based on instant of real time. The control system automatically switches ON and OFF the streetlights at appropriate timing and by varying the intensity as required. The IOT are used to monitor the updated information through the cloud.

BLOCK DIAGRAM

POWER SUPPLY

ULTRASONIC SENSOR (3)

ARDUINO UNO

LCD

IOT

(MONITOR & CONTROL)

LED – 3(1W)

RTC

GPS

GSM

LDR

HARDWARE REQUIREMENT

1. ARDUINO UNO
2. PIR SENSOR / ULTRASONIC SENSOR
3. LED – (3) (1W)
4. RTC
5. LDR SENSOR
6. LCD
7. GPS
8. GSM
9. IOT

SOFTWARE REQUIREMENT

1. ARDUINO IDE
2. EMBEDDED C LANGUAGE

APPLICATIONS

* 1. Smart Street lights could be equipped with Radar Sensors which

could detect if any object comes near the pole and the light gets

brighter.

* 1. If light gets bright till (1hrs-2hrs) to identify the unwanted incident in that area.