**A LoRa-based Smart Street Lighting System for**

**Smart Cities**

**Aim:**

Aim of this project is smart street lamp for energy efficient using system implemented by ESP8266. Light intensity is high or low it is based on human count.

**Introduction:**

This paper is proposed highly automated and low energy consuming street lamp monitoring and controlling system. LDR sensor is used to find day or night for street lamp on and off purpose. Current sensor is used to display the measured current. With the help of LDR sensor street lamp on and off. Node one communicates with node two with the help of Lora. When the sensor in node one are disconnected due to loss of electricity with the help of Lora in second node activate the node 1 sensor. The node1 and node2 data transmit to the third Lora and the lora connected to nodemcu with the help of nodemcu all the data are transfer to the cloud This smart street lamp also checks people are using knife, gun etc in untimed. If people having weapon raspberry pi will get address and camera number intimate to control room.

**Existing system:**

A smart street lighting solution is a key to ensuring energy savings and increasing the efficiency of maintenance services. Studies in this field are autonomous adaptive solutions, remote control and adaptive lighting solutions supported by artificial intelligence methods. In this paper, sample solutions are reviewed. A new solution based on Lora technology to control and monitor lighting remotely are proposed.

Proposed system:

 In this proposed system is LDR sensor is used to find day or night for street lamp on and off purpose. Current sensor is used to display the measured current. With the help of LDR sensor street lamp on and off. Node one communicates with node two with the help of Lora. When the sensor in node one are disconnected due to loss of electricity with the help of Lora in second node activate the node 1 sensor. The node1 and node2 data transmit to the third Lora and the Lora connected to nodemcu with the help of nodemcu all the data are transfer to the cloud .This smart street lamp also checks people are using knife, gun etc in untimed. If people having weapon system will get address and camera number intimate to control room.

**Block diagram:**

LDR

Arduino NANO

Lora

**LDR sensor**

Arduino NANO

Lora

Current

**Current**

Lamp

Relay

Relay

Lamp

Lora

Camera

Esp8266

System

Control Room

 

**Block diagram description:**

Above the diagram is containing Arduino Uno, Arduino nano USB camera, and LDR sensor, Lora, nodemcu, current sensor, and lamp LDR sensor is used to find day or night for street lamp on and off purpose. Current sensor is used to display the measured current. With the help of LDR sensor street lamp on and off. Node one communicates with node two with the help of Lora. When the sensor in node one are disconnected due to loss of electricity with the help of Lora in second node activate the node 1 sensor. The node1 and node2 data transmit to the third Lora and the Lora connected to nodemcu with the help of nodemcu all the data are transfer to the cloud This smart street lamp also checks people are using knife, gun etc in untimed. If weapon detect will having get address and camera number intimate to control room. Camera is capturing the weapon activities and surveillance to control room. LDR sensor detect the intensity of the light and activate street light.

**Component requirement:**

**Hardware requirement:**

* NODEMCU
* LDR sensor
* USB camera
* Lora -3
* Arduino Uno
* Arduino nano
* Current sensor-2

**Software requirement:**

* Embedded “c”
* Arduino IDE