"SMART STREET LIGHT SYSTEM USING IOT"

Abstract : Smart street lighting system aims for designing and executing the advanced development in IOT for energy saving of street light, the best solution for electrical power wastage is automation of street light,the intensity of the street light can be varied using LDR and IR sensors and the manual operation of the lighting system completely eliminated.

BLOCK DIAGRAM:

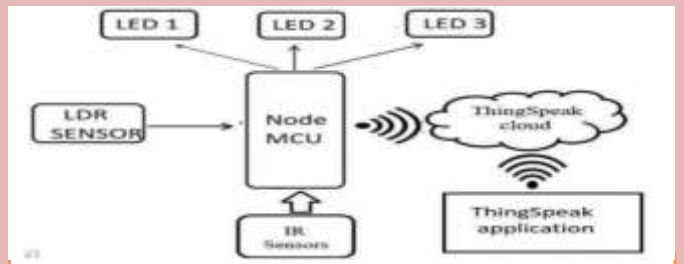


Figure 1 : SMART STREET LIGHT SYSTEM USING IOT

The LDR sensor senses intensity of light fallen on it and IR sensors senses movement of objects and sends the information to Node-MCU which is a Wifi module, as shown in Figure 1.
For Node-MCU the LDR and IR values are uploaded to the cloud at regular intervals of time. From the xloud, LDR and IR values can be seen graphically on ThingSpeak.com

Advantages:

- Automatically switch street lights on once the sun sets and switch them off after dawn.
- Send alerts for each light that needs attention, to reduce failure and the need for sudden repair.
- Reduce maintenance of street lights, leading to cost reduction.
- They promote energy efficiency by adjusting lighting levels based on real-time needs, resulting in significant energy savings.

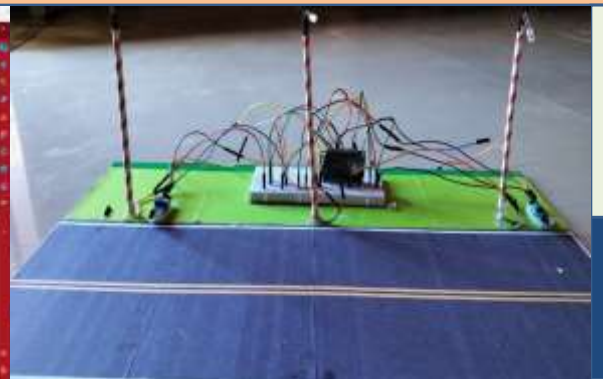
Applications:

- Smart street lights can reduce operational costs through remote monitoring, predictive maintenance, and automated fault detection.
- Smart street lights can be integrated into broader smart city initiatives, enhancing urban living by connecting various services and infrastructure.
- IOT-enabled street lights can facilitate citizen engagement through features like Wi-Fi hotspots, public announcements, or interactive displays.

Future Scope:

- Wireless power transmission can be provided to reduce the maintenance cost and power thefts of the system.
- The system can be made self-sufficient by using non-conventional energy resources like solar power, windmills, piezo-electric crystals etc.

Result: The smart streetlight monitoring system effectively reduces energy consumption and increases public well-being and safety. It is not only economically friendly but also easy to implement by the local government.



Prajwal K J (21EC071)
Pruthvi Raj H (21EC073)
Srivatsa S (21EC093)
Vinay S H (21EC105)

Dr.M.C.CHANDRASHEKHAR
Professor,Dept. of ECE, SSIT,TUMAKUR

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
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