

IOT Based Automatic Street Light Control by Detecting Vehicle Movement

About This Project:

This project aims for designing and executing the advanced development in embedded systems for energy saving of street lights. Currently we have a manual system where the street lights will be switched ON in the evening before the sunsets and they are switched OFF in the next day morning after there is sufficient light on the outside. But the actual timing for these lights to be switched ON is when there is absolute darkness. With this, the power will be wasted up to some extent. This project gives solution for electrical power wastage. Also the manual operation of the lighting system is completely eliminated. The proposed system provides a solution for energy saving. This is achieved by sensing and approaching a vehicle using an IR transmitter and IR Receiver couple. Upon sensing the movement the sensor transmits the data to the microcontroller which furthermore switches the Light ON. Similarly as soon as the vehicle or an obstacle goes away the Light gets switched OFF as the sensor senses any object at the same time the status (ON/OFF) of the street light can be accessed from anywhere and anytime through internet. This project is implemented with a smart embedded system which controls the street lights based on detection of vehicles or any other obstacles on the street. Whenever the obstacle is detected on the street within the specified time the light will get automatically ON/OFF according to the obstacle detection and the same information can be accessed through internet. The real time information of the street light (ON/OFF Status) can be accessed from anytime, anywhere through internet.

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Block Diagram:

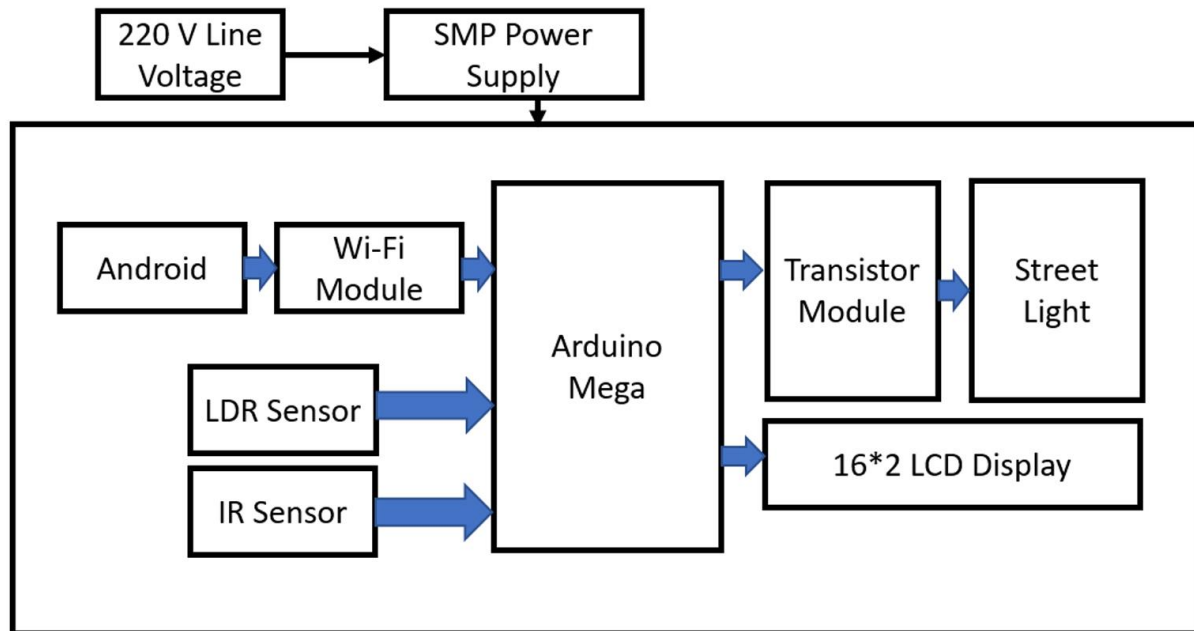


Figure: Block Diagram of IOT Based Automatic Street Light Control by Detecting Vehicle Movement

Required Instruments:

- Arduino Mega
- Wi-Fi Module.
- LDR Sensor Module.
- LCD Display.
- BC 547 Transistor.
- SMPS Power Supply.
- Remote XY Apps.

Advantages:

There are many advantages of our project because of its accuracy. Some of the advantages are pointed out below:

- Automatic Switching of Street lights.
- Maintenance Cost Reduction.
- Reduction in CO₂ emission.
- Reduction of light pollution.
- Wireless Communication.
- Energy Saving.
- Reduction of manpower.

Applications:

The application areas for this project in this modern and practical world are huge and some of these are given below:

- This project can be used extensively in the capital cities and in any city.



N.B: Any modification of this project can be done as per your requirement. We will make the project according to your needs. Contact us with your any innovative engineering projects idea. We will help you to implement your project.

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