**Intelligent And Weather Adaptive Street Lighting System**

**Abstract:**

This project will be used to transform lighting from a simple illumination source into a smart

infrastructure of the project. IOT will help in connecting the internet with the lighting system. Helps in sensing the environment and providing the lighting accordingly leading to efficient use of electricity and saving energy.

The project helps in controlling the street lights wirelessly in a centralized manner. The lights can be switched ON and OFF anytime anywhere. Also, the intensity of the light can also be controlled according to the level of darkness in the surrounding environment.

**Problem Statement:**

This project’s target is to optimize the street lighting system. The electricity used for the street lights is placed at anywhere between twenty to forty percent of that produced in India. An IoT based solution will keep control of which lights are working, and how much intensity will work the best in a particular scenario.

**Components Used:**

* ESP8266 12E module
* NRF modules
* LED's(representing street lights)
* LDR sensor

**Methodology:**

This project aims at designing smart street lighting system for energy saving of street lights. It controls the street lights based on intensity of light on the street. We can control the lights wirelessly and also vary its intensity depending on the darkness level and the weather conditions. Whenever the change is detected on the street, the light will get automatically ON/OFF or can be operated manually.

**Advantages Of The Proposed System:**

* Automated switching ON/OFF of the street lights
* The CO2 emission is reduced.
* The light pollution is reduced.
* The communication is made wireless.
* The cost is significantly reduced because sodium vapour lamps are replaced by LED Energy is consumed more.
* Man power is entirely eliminated

**Disadvantages Of The Existing System:**

* Manual switching ON/OFF is done on the street lights.
* More Energy Consumption due to the sodium vapour lamps.
* Expensive, Since light is made to be ON the entire night.
* More man power is required and periodic check is a must.

**CONCLUSION:**

The main aim of the system is to cut down the three important problems that our country is finding difficult to tackle.

* Energy wastage
* Reduction of energy costs

As the LED bulbs are used,it emits less heat when compared with mercury lamps. This system cuts down the cost of conventional system by 50-60% which improves the economy of the country and saves a huge amount of investment as it can be utilized in useful ideas.

The system is

* Cost efficient
* Reliable
* Prevents manual ON and OFF of lights
* Controls intensity of lights
* Prevents energy wastage