**INTRODUCTION :**

The idea of designing a new system for the streetlight that do not consume huge amount of electricity and illuminate large areas with the highest intensity of light is concerning. Providing street lighting is one of the most important and expensive responsibilities of a city. Lighting can account for 10–38% of the total energy bill in typical cities worldwide. Manual control is prone to errors and leads to energy wastages and manually dimming during mid night is impracticable. Also, dynamically tracking the light level is manually impracticable. Therefore Government of India had Introduced Solar Street Lights saving more energy compared to normal street lights. But the current trend is the introduction of automation and remote management solutions to control street lighting. The present street lightning framework have many problems which needs to be worked upon. In Bad weather condition, the timing of street light ON/OFF differ discernibly which is one of the main problems of the present street lights systems. Due to human intervention sometimes street lights are ON most of the day without any purpose because these are manually operable and this cause huge amount of power loss meaninglessly. To solve this problem we have modified government installed solar street lights to a smarter model For Cities and Villages. And a Wind-Solar hybrid model for highways and railways.

**WORKING :**

The process starts by detecting it is night time or day time if it is day time the street light will be in ‘OFF’ state and then Arduino will show ‘0’ state at Light Sensor and ‘Day’ at serial. If the night time is detected by the Light Sensor then it check for the presence of the vehicle if the presence of vehicle is detected then ultrasonic sensor will respond and respective lamp will glow at high intensity then Arduino will check for the status of ultrasonic sensor and Light Sensor then the monitored data will be updated in the cloud automatically. If the presence of vehicle is not detected then it waits for the vehicle and street light will glow at low intensity then the Arduino will show ‘0’ state of the ultrasonic sensor at serial monitoring and it is updated in the cloud and then the process will end. All the data will be stored in a cloud a web application. This system will eliminate the system of manual control as the system will cause to light up when the ultrasonic value become less than our defined value. Also, the light will automatically switch OFF when detected value of ultrasonic become greater than the defined value. This system works for roads, Streets, hotel & mall parking area. In this system the lights do not remain in OFF state, instead they remain ON but in less intensity. Again, if the motion is detected here the intensity of light become greater for the particular time interval. This is a dimming effect created by our system. This model is very useful for Cities as well as Villages.

For highways and railways we have used an wind-solar hybrid model. As the above model is not suitable for highways due to congested traffic the street lights are almost works on full intensity throughout the night causing wastage of energy. So to tackle this problem we have came up with an solution. Wind-Solar hybrid model is used in highways as vehicles moves very fast the force produced by passing vehicle will be used to produce energy and street lights are turned ON alternately this will minimize the wastage of energy. Similarly, same model can be used for railways.

**TECHNOLOGY USED :**

To collect all the data such as intensity levels, light status, speed of vehicles, pollution levels we have created a web application. The Admin or an authorized person will have access of this data. For Frontend we have used HTML(Hyper Text Markup Language) , CSS(Cascading Style Sheets) and JS(JavaScript). The Frontend of the model is almost completed. For Backend Development we will be using PHP. For the collection of data we will be using databases such as MySQL or Xampp. If any malicious activity detected near the street light the system will give an alert to admin. Still if the theives continues to harm the pole an ample amount of shock will be given by the system.

**BENEFITS OF THIS MODEL :**

This collected data will be helpful For Indian Navigation system. More than 50% of Cities Energy will be saved saving Crores of rupees every year. Reducing Accidents and saving thousands of life. Creating a Safer Environment for late night workers. Approximately in 5 years installation cost will be recovered.

**Conclusion :**

This model aims to find the solution of power consumption and manual working of the current system. This system overcomes the drawback of current system of manual operation. Making Smart Street Lights. This system is solely made for using in a wide scale project. Also, it is very cheap.