

**PRESIDENCY UNIVERSITY**

A Report on

**“SMART STREET LIGHT SYSTEM USING ARDUINO”**

**Bachelor of Technology**

**In**

**Computer Science and Engineering**

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**Aim:**

The aim is to create a smart street light system using Arduino uno and IR sensors that turns on automatically when the object is detected, like for example when a person or a vehicle passes by the road the lights get turn on and off.

**Components:**

* Arduino uno
* IR sensors
* LEDs
* Breadboard
* jumper wires

**Abstract:**

We are living in 21st century where automation of any form Plays an important role in human life. A smart or automated street light system has to be developed which can be created by using technology.

The main objective of this project is to develop a smart lighting system using Arduino that can control the streetlight efficiently by using sensors to dim and brighten whenever it is required. This system is based on the concept of IoT (Internet of Things). It helps to reduce the number of accidents that takes place on the roads and also saves a lot of power and electricity. It increases safety and provides more efficiency. It also provides a safe environment for the pedestrians during the night-time by lighting up the place.

**Introduction:**

* The whole world has  more than 300 million streetlamps which are killing power in view of helpless support framework.
* Overlighted streets waste high energy which approximately emits 20000kWh CO2,which is harmful for animals and humans.
* Generally the components in the streetlamps transmit 100 million tons of carbon dioxide yearly, which brings about 40% wastage in power. The main reason for power shortage in India.
* Govt of India has come up with a scheme in which conventional street lamps replaced by LEDs, which has resulted in ~47 billion kWh per year.
* Our system which uses sensors to detect the vehicles/objects turns on the light accordingly results in not only cut downs the energy consumption , it also reduces the CO2 emissions.
* So By also implementing this Smart Street light framework ,we can save more energy, Money.

**Architecture:**

Graphical user interface, diagram, application

Description automatically generated

**CODE**

int led = 10;

int led1=11;

int led2=12;

int led3=13;

int sensor = 2;

int sensor1 = 3;

void setup() {

  pinMode(led, OUTPUT);

  pinMode(led1, OUTPUT);

    pinMode(led2, OUTPUT);

    pinMode(led3, OUTPUT);

  pinMode(sensor, INPUT);

pinMode(sensor, INPUT);

  Serial.begin(9600);

}

void loop() {

  int sensorval = digitalRead(sensor1);

  if (sensorval == HIGH) {

    digitalWrite(led, LOW);

    digitalWrite(led1, LOW);

  }

  else {

      digitalWrite(led, HIGH);

      digitalWrite(led1,HIGH);

      delay(2000);

  }

    int sensorval1 = digitalRead(sensor);

  if (sensorval1 == HIGH) {

    digitalWrite(led2, LOW);

    digitalWrite(led3, LOW);

  }

  else {

        digitalWrite(led2, HIGH);

        digitalWrite(led3,HIGH);

        delay(2000);

  }

}

**A picture containing application

Description automatically generated**

**Working Model:**

**A picture containing red, indoor, light

Description automatically generated**

A picture containing red, light

Description automatically generated

**Conclusion:**

The proposed system has various advantages ,implementing this system all across the country saves more energy, money, reduced accident rates.