**ENERGY SAVING STREET LIGHT**

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***PRESENTED BY***

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**1.ABSTRACT:**

We are living in 21st Century where automation of any form needed , which plays an important role in human life. when we comes to our project, the concept is simple , crystal clear and useful to every living being :applied to street lights which helps in Energy saving in terms of power.

In this project, we have designed a simple street light using Nodemcu esp8266 and we can also monitor through Thingspeak platform of working of street light. we can say that it is a automatic street light, which depends mainly on sun light.

This street light is operated by a arduino software and thingspeak. Ofcourse which is depend on the intensity of sunlight only for it's operation.

**2.INTRODUCTION:**

In order to understand the principle of operation of energy saving street light ,let's us divde the project mainly into three parts

\* The first part is sending data into nodemcu from LDR (light dependent resistor) using arduino software.

\* The second part is due to intensity of sunlight (photons), are taken input as LDR sensor then the respective work will be done by it in form of street light.

\*The monitization of street light can be done with the help of Thingspeak platform.

**3.Components**

1.Nodemcu ESP8266

2.LDR (photo resistor)

3.LED (street light)

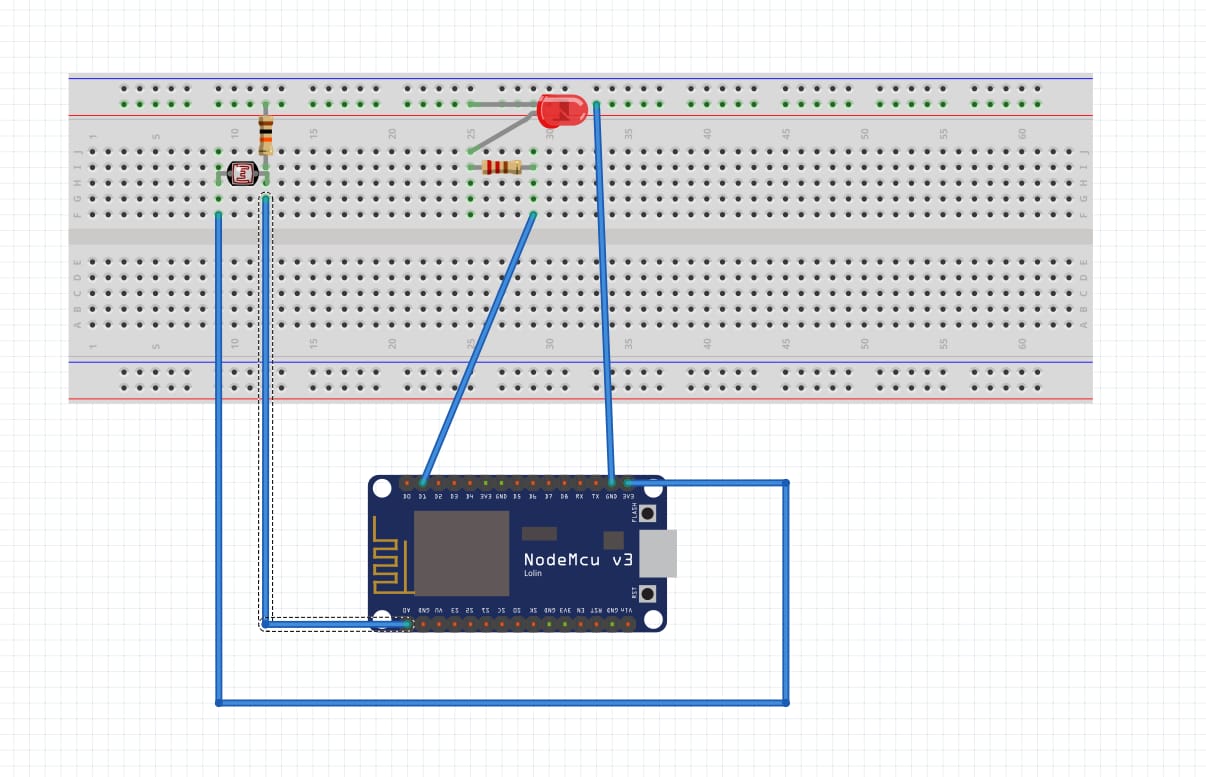
4.Resistor

5.Bread board

6.Jumper wires

7.Personal laptop

**4.Circuit diagram**

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**5.block diagram**

PROGRAM

SUNLIGHT

LED

THINGSPEAK

NODEMCU

ESP8266

LDR

POWER SUPPY(5V)

**6.WORKING PROCESS**

In this project, we aimed to develop a low maintenance, platform to provide a richer and more interactive experience for street lighting. However, we also wanted to achieve energy saving while also delivering some spectacular results.

From this project, LED (which as street light) is controlled by the intensity of sunlight, is designed. The working of energy saving street light is explained here.

As mentioned earlier, the energy saving street is a automatic street light which can be monitor on thingspeak . First of all, when we connected power supply (5v) and then interface with Nodemcu (which is the heart to our project) at the same time sending a program to Nodemcu.

By coming to LDR, when sunlight hits LDR(Photo resistor) then LED will not glows and In thingspeak it will shows graph as straight line without any disturbs. By the way , when sunlight dosen't hits LDR then LED Start working , Their will be a some disturbs in graph which shows in thingspeak (indicated that led is on now).

**7.APPLICATION**

* energy saving street light are very useful in many applications like highways, low maintenance areas etc
* long life service
* high light efficiency , low energy consumption
* we can also moniter the working process of that light from anywhere

**8.APPENDIX**

*#include <ThingSpeak.h>*

*#include <ESP8266WiFi.h>*

*const char\* ssid = "IAM IRONMAN";*

*const char\* password = "12192302";*

*const int ldrPin = A0; // Defining LDR PIN*

*int input\_val = 0; // Variable to store Input values*

*const int ledPin = 5;*

*WiFiClient client*;

*long myChannelNumber = 1101154;*

*const char myWriteAPIKey[] = "KSP74PSLSVCW3C1L";*

*void setup() {*

*Serial.begin(9600);*

*delay(100);*

*pinMode(ledPin, OUTPUT);*

*digitalWrite(ledPin, 0);*

*pinMode(ldrPin, INPUT);*

*Serial.println();*

*Serial.println();*

*Serial.print("Connecting to ");*

*Serial.println(ssid);*

*WiFi.begin(ssid, password);*

*while (WiFi.status() != WL\_CONNECTED) {*

*delay(200);*

*Serial.print("...");*

*}*

*Serial.println("");*

*Serial.println("WiFi connected");*

*Serial.println("IP address: ");*

*Serial.println(WiFi.localIP());*

*ThingSpeak.begin(client);*

*}*

*void loop() {*

*input\_val = analogRead(ldrPin); // Reading Input*

*Serial.print(input\_val);*

*if (input\_val<=500){*

*digitalWrite(ledPin, HIGH);*

*Serial.println("LED is ON");*

*}*

*else {*

*digitalWrite(ledPin, LOW);*

*Serial.println("LED is OFF");*

*}*

*ThingSpeak.writeField(myChannelNumber, 1,input\_val, myWriteAPIKey);*

*}*

THANKYOU