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for Partial Fulfilment of the Requirements for the  
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in Information Technology  
IT211 Software Group Project-I (4<sup>th</sup> sem)

**Submitted at**



**DEPARTMENT OF INFORMATION TECHNOLOGY**

**Chandubhai S. Patel Institute of Technology**

**At: Changa, Dist.: Anand – 388421**

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**CERTIFICATE**

This is to certify that the report entitled “**Street Light Mission**” is a bonafied work carried out by **Meet Patel(15IT093)** under the guidance and supervision of Prof. **Hemant Yadav** for the subject **Software Group Project-II (IT215)** of 4<sup>rd</sup> Semester of Bachelor of Technology in **Information Technology** at Faculty of Technology & Engineering – CHARUSAT, Gujarat.

To the best of my knowledge and belief, this work embodies the work of candidate **himself**, has duly been completed, and fulfils the requirement of the ordinance relating to the B.Tech. Degree of the University and is up to the standard in respect of content, presentation and language for being referred to the examiner.

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### **Acknowledgement**

I would like to express my special thanks of gratitude to Prof. Hemant Yadav as well as our Principal who gave me the great opportunity to do this wonderful project on the **Street light control on web page**, which also helped me in doing a lot of Research and I came to know about so many new things. I am really thankful to them.

Secondly, I would also like to thank my parents and friends who helped me a lot in this project work. I am making this project not only for marks but to also increase my knowledge.

THANKS AGAIN TO ALL WHO HELPED ME.

-Meet Patel (15IT093)

### Abstract:

In this Software Group Project-II we have made Street lights are on off according on web page.

In which we include concepts of **Arduino coding**.

## Chapter 1: Introduction

### 1.1 Project Summary:

- ▶ My Project is Divide In Three Part:
  1. Input Reading
  2. Server
  3. Webpage Output

### 1.2 Scope:

- The Most advantage is that it will help to save electricity.
- Any unknown person can see the street light is on or off with the help of webpage.
- Main source of the management can turn off and on the light of any street
- Whole system will work automatically so it reduces the human work.

### 1.3 Objective:

- 1. Input Reading:** I can take input reading from the LDR Sensor, In Arduino changed input to Output With using the Programming. Then after Output send threw Wi-Fi module
- 2. In Server:** In Server Program Output can be saved. Then after send a data to browser.
- 3. Webpage Output:** On webpage I can display Street light Position and on/off Situation.
- 4. Procedure:** First, LDR sensor takes input data then inputted data convert into output by Arduino CKT after that output data can transfer into ESP Wi-Fi Module. This data is sent to a Server by Wi-Fi Module. After receiving data stored in server, that data show in browser using webpage.

## **Chapter 2: Software and Hardware requirement**

### **2.1 User characteristics:**

2.1.1 All people can use. Specially it can help to circuit designers and students.

### **2.2 Tools and Technology used:**

#### **2.2.1 Hardware:**

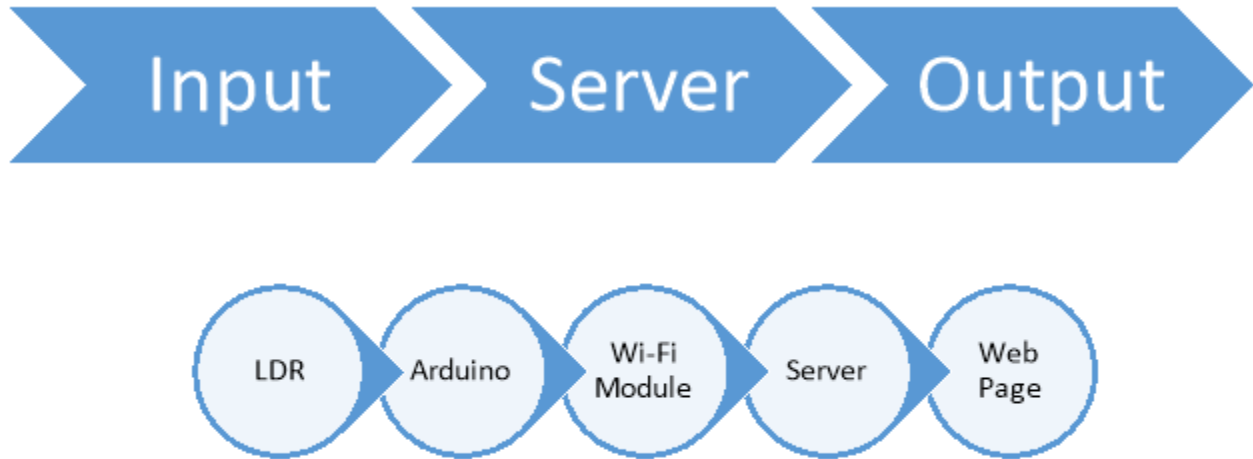
- Arduino nano.
- LDR.
- ESP-8266.
- Bread-board.
- Wires.
- Register.

#### **2.2.2 Software:**

- Arduino coding.

## Chapter 3: System Design

### 3.1 Project Flow:



### 3.2 Major functionality:

- Provides a functionality of sensor –based on street light.
- With the help of webpage, we can on or off the street light.
- Can be considered as an updating for switch board technology.

## Chapter 4: Implementation Planning

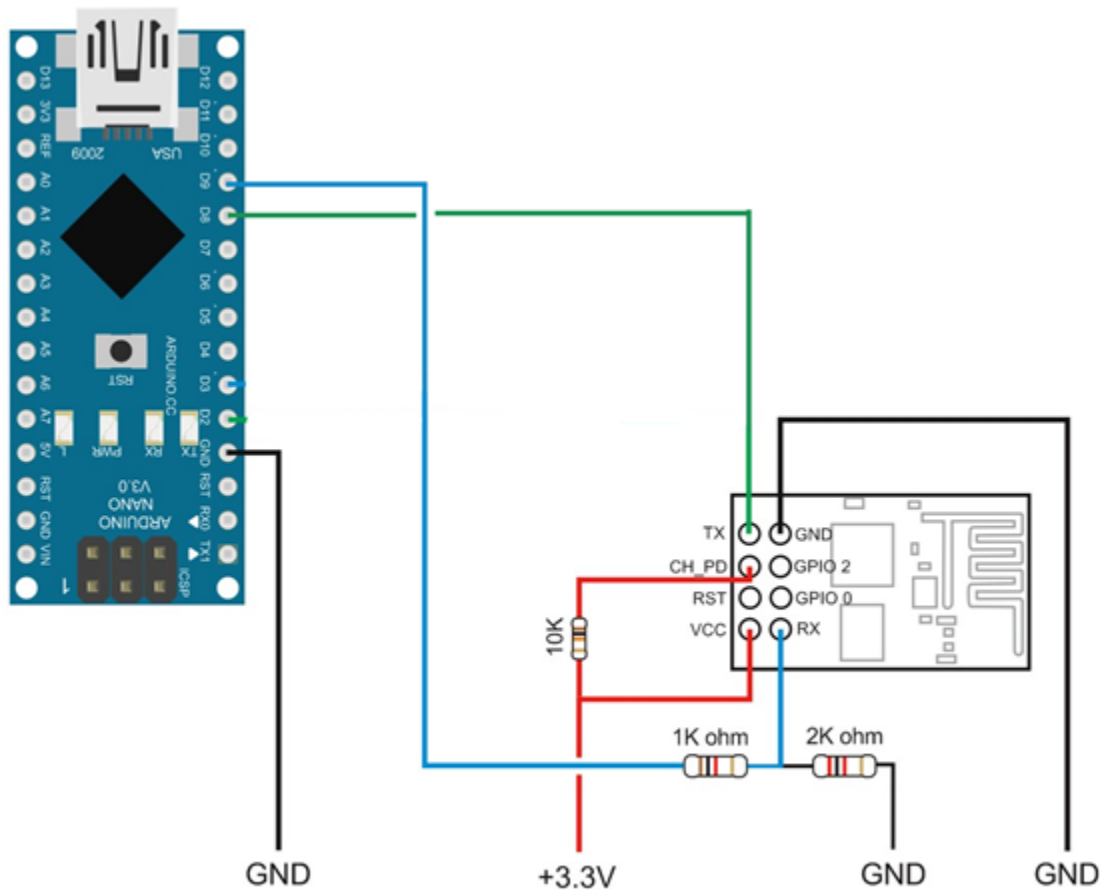
### 4.1 Implementation Environment:

- It can be used in many companies.
- It also used in cities street.

### 4.2 Module Specifications:

- We have use arduino for coding and ESP 8266 module in my project.
- Then we upload our project in Arduino.
- Then we run our project.

### 4.3 Snapshot of project:







### 1) ESP 8266 Coding:

```
const char* ssid = ""; //put your SSID of the router to connect with
const char* pass = ""; //put your password of the router to connect with
int led;
String response;
```

```
void setup()
{
  Serial.begin(115200);
  delay(10);
  pinMode(2, OUTPUT);
  digitalWrite(2, 0);

  Serial.println();
  Serial.print("Connecting to.....");
  Serial.println(ssid);

  WiFi.begin(B11,Darshanb11@123);

  while (WiFi.status() != WL_CONNECTED)
  {
    delay(500);
    Serial.print(".");
```

```
}

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

server.begin();
Serial.println("Server started.....");

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

void loop()
{
  WiFiClient client = server.available();
  if (!client)
  {
    return;
  }
  Serial.println("new client");

  while(!client.available())
  {
    delay(1);
  }

  String req = client.readStringUntil('\r');
  Serial.println(req);
  client.flush();

  if (req.indexOf("on") != -1)
  {
    led = 0;
    responce = "ON";
  }
  else if (req.indexOf("off") != -1)
  {
    led = 1;
    responce = "OFF";
  }
  else
  {
    Serial.println("invalid request");
    return;
  }

  digitalWrite(2, led);
```

```
client.flush();
client.print(responce);

delay(1);
Serial.println("Client disonnected");
}
```

## 2) LDR Coding:

```
#include <SoftwareSerial.h>
```

```
int sensorValue = 0;
int A7;
```

```
void setup()
{
  pinMode(2, OUTPUT);
  Serial.begin(9600);
}
```

```
void loop()
{

  sensorValue = analogRead(A7);
  Serial.println(sensorValue);

  if (sensorValue < 80)

  {

    digitalWrite(2, HIGH);
    Serial.println(HIGH);

  }

  else
  {

    digitalWrite(2, LOW);
    Serial.println(LOW);

  }

  delay(300);

}
```

## **Chapter 5: Limitations, advantage and Future Enhancement**

### **Limitation:**

- It is a theoretical circuit and may require few changes in practical implementation.
- It is very expensive.

### **Advantages:**

- The Most advantage is that it will help to save electricity.
- Any unknown person can see the street light is on or off with the help of webpage.
- Main source of the management can turn off and on the light of any street
- Whole system will work automatically so it reduces the human work.

### **Future Enhancement:**

- For the betterment of the country, we can use this project in very well manner and it can also save the electricity.

## Chapter 6: Conclusion

- Finally, From this project, I have learned how to use Arduino hardware & software, many things like how to deal with server and I have learned embedded working from this project.

### References

<https://www.youtube.com/watch?v=ayF4Oymf08k>

<https://www.youtube.com/watch?v=J19sd61mvhw>