Street Light Management System

D. Nithish - IMT2014016
V. Keerthi Chandra - IMT2014064

Electronic Device

The first part is to build the device that needs to be installed on the required streetlights. So we choose "Nodemcu" Micro Controller board to meet the requirements. This can be done with any other boards that is compatible with the "esp8266" Wifi module. The circuit part is as follows

Materials

1. Nodemcu Esp8266 CP2102 IOT board
2. 5V Battery
3. Resistor 10k
4. LDR Photo Resistor
5. Breadboard

Circuit Connections

1. Connect vin pin to the 5V/9V battery and ground pin from the board to the -ve terminal of the battery.
2. Connect LDR +ve pin to the 3V pin of the board.
3. Connect LDR -ve pin to the resistor of 10k
4. Other end of resistor to the ground.
5. Connect LDR -ve pin to the A0 pin of the board to read values from the light sensor.

Circuit Diagram

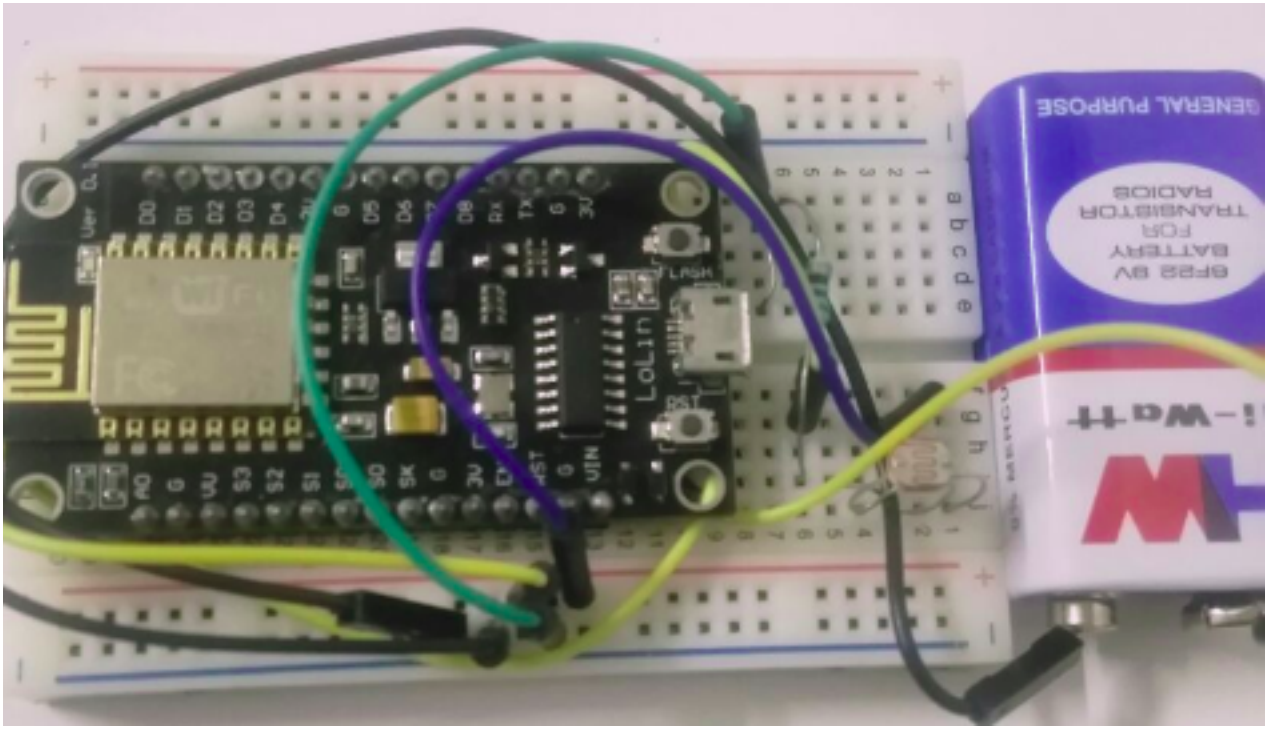

Figure 1: Circuit connections for the device

Circuit Testing

To test the device you should focus light on the LDR Photo Resistor. If you are connected to an appropriate network then you should see the intensity values as output in the serial monitor of your Aurdino IDE. If that happens you can consider your device to be remotely working i.e without the website integration. If the intensity values are low you can see a automatic complaint registering in your complaint table. Thereby providing a proof that that the device is sending data appropriately to the website and is in working condition after the website integration.

Web part

Installation

Django can be installed using pip(python library manager) by executing following commands

```
sudo apt-get install python3-pip
sudo pip3 install django
```

Project Structure

```
Street Light Project
├── home
│   ├── migrations
│   ├── static
│   ├── templates
│   ├── urls.py
│   ├── models.py
│   ├── views.py
│   ├── apps.py
│   └── forms.py
├── mysite
│   ├── settings.py
│   ├── wsgi.py
│   └── urls.py
├── db.sqlite
└── manage.py
```

1 Files in Home App

Home is our app directory which contains the following files:

1. **migrations** - Contains the database migrations files
2. **static** - Contains the js,css and asset files related to project
3. **templates** - Contains the html files related to project
4. **urls.py** - Contains urls related to our Home App
5. **models.py** - Contains the database names and their fields
6. **views.py** - Contains the functions for specific urls
7. **apps.py** - Contains the App configurations
8. **forms.py**- We haven't used any Django forms so this not of much interest.

2 Files in Mysite App

Mysite is the default Django app created when you create a project using Django. The files it contains are:

1. **settings.py** - Contains the project settings
2. **wsgi.py** - file required to run server
3. **urls.py**- url routing related to the mysite App

Running Project

```
python3 manage.py runserver 0.0.0.0:8000
```