CSN-527
IoT Project Presentation

Alexa/Google Home app controlled LED Strip

Group - 16

Aryan Jain - 19114012
Pragya Dalal - 19114063

Problem Statement

- Control an addressable LED Strip using Alexa/ Google Home App
  - Turn ON/OFF the LEDs
  - Change the Brightness
  - Change the Color of LEDs

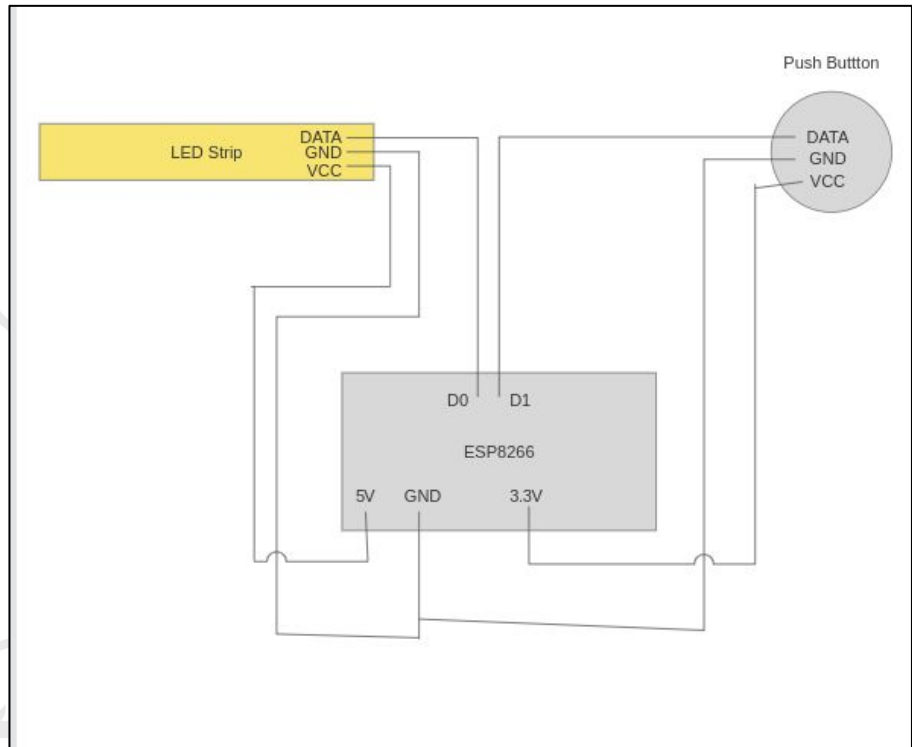# Devices Used and Circuit Diagram

Devices Used

ESP8266 Board

Addressable LED Strip(WS2812B)

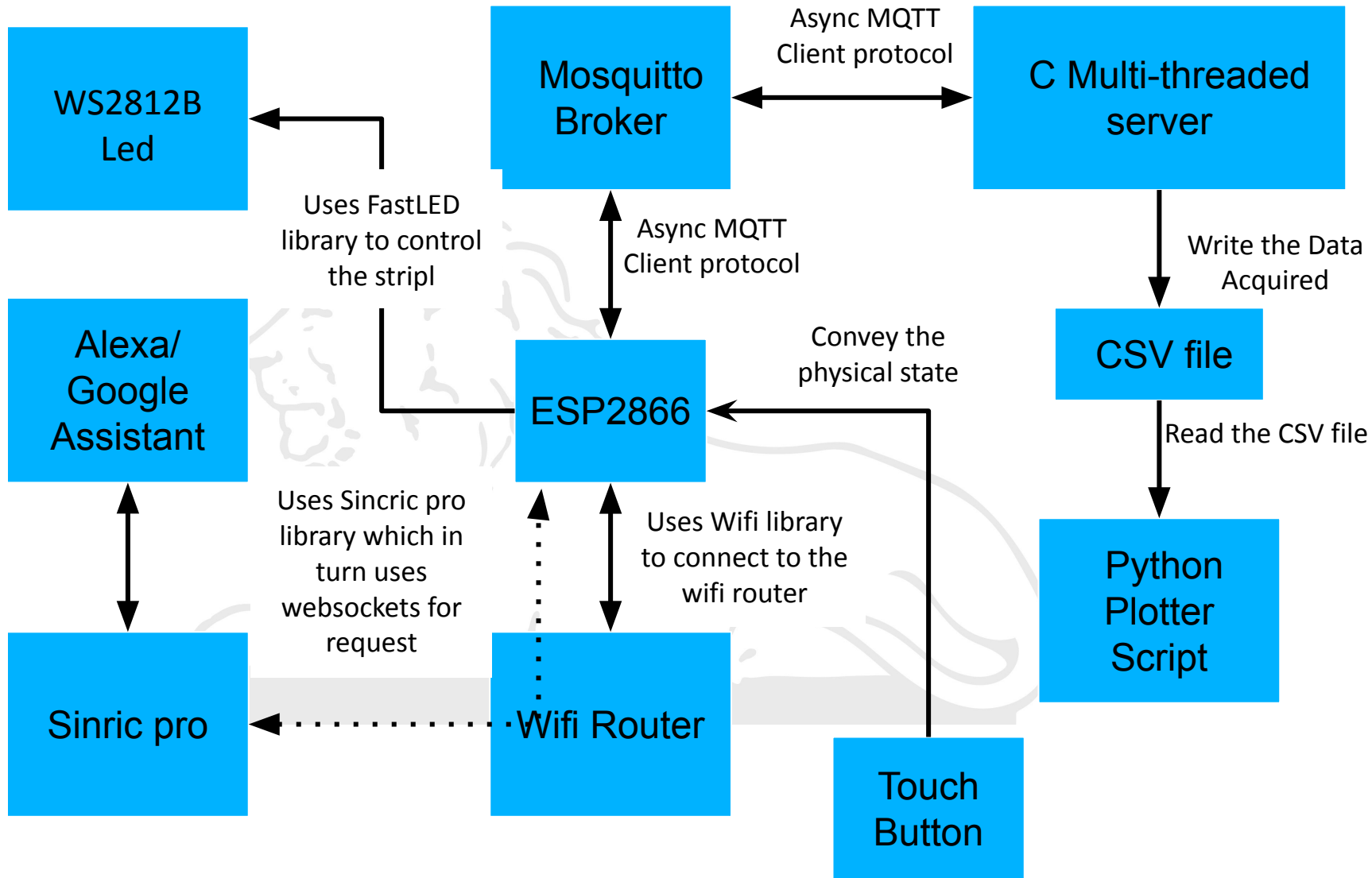Push Button

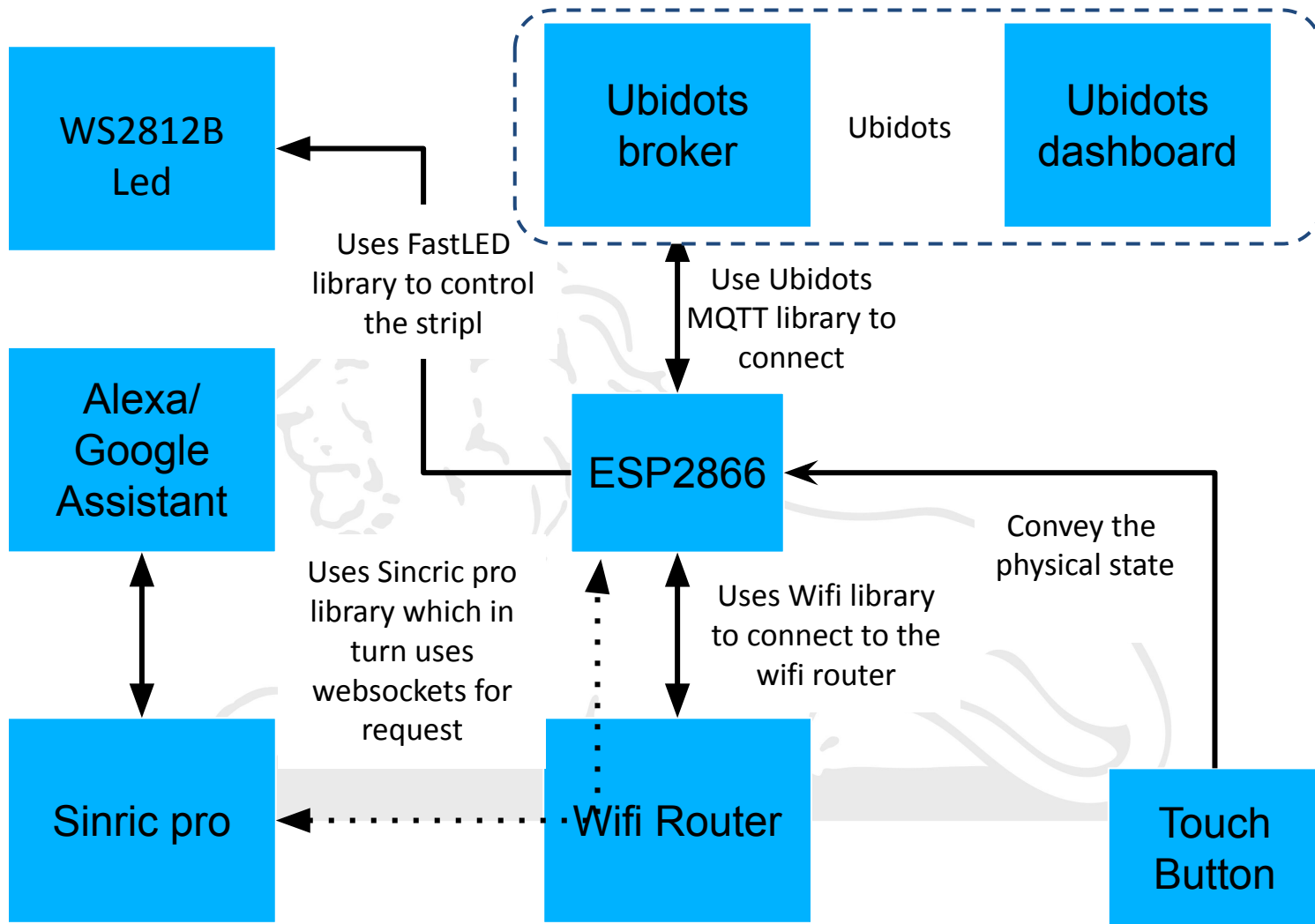Female Jumper Wires

Circuit Diagram

Functionalities Offered

- Controlling LED Strip using Alexa/ Google Home app using Sinric Pro Library
- Multiple Light modes available for Alexa app
  - created Custom Device template using Sinric Pro library
  - user can change from Normal to *blinking* Party mode in seconds.
- OTA functionality added to allow user to upload a new sketch using wifi
  - done using AsyncElegantOTA as well as ArduinoOTA library
- **PowerSaver** Option available
  - If turned ON, it keeps reducing the brightness by 50% for every inactive interval of 60 seconds.
- Data Analysis using Ubidots integration
 - these plots can be used to analyse the usage of the LEDs

Arduino Scripts Design

Arduino Scripts Design

WS2812B Led

Ubidots broker

Ubidots

Ubidots dashboard

Uses FastLED library to control the stripl

Use Ubidots MQTT library to connect

Alexa/ Google Assistant

ESP2866

Uses Sincric pro library which in turn uses websockets for request

Convey the physical state

Uses Wifi library to connect to the wifi router

Sinric pro

Wifi Router

Touch Button

Project Demo

Project demo link:-
https://drive.google.com/file/d/1L4HtCAPgunxVe9Neh7SyflORXX8QtHjM/view?usp=share_link
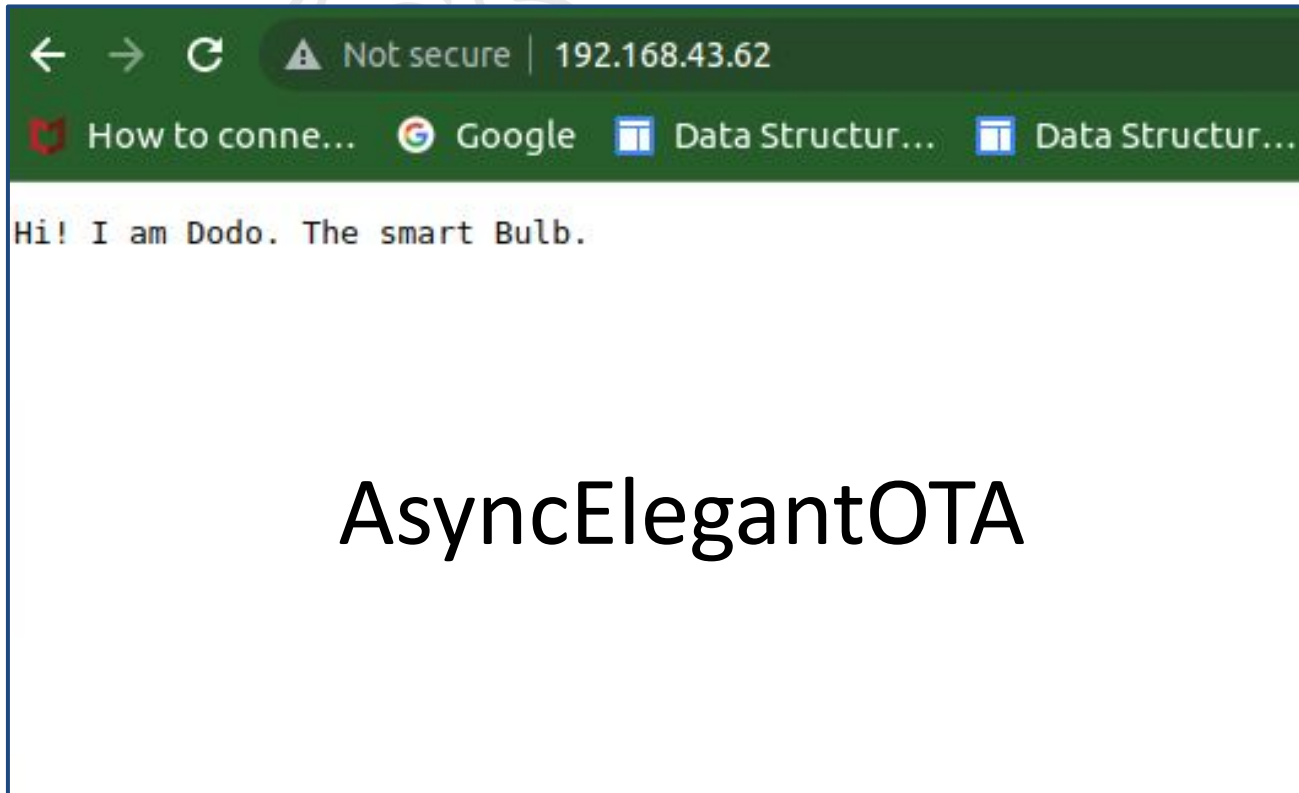
Async Elegant OTA
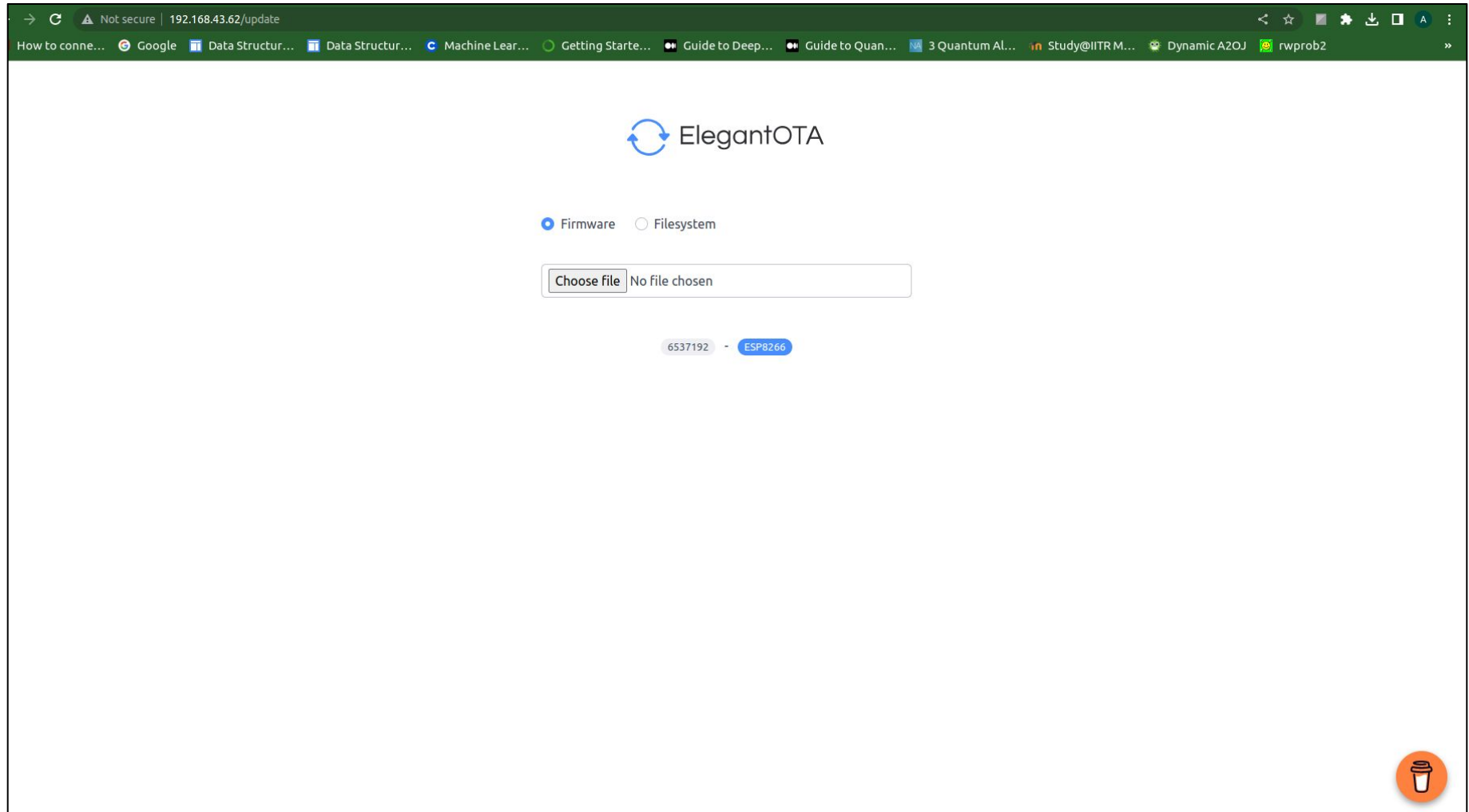
AutoConnect AP

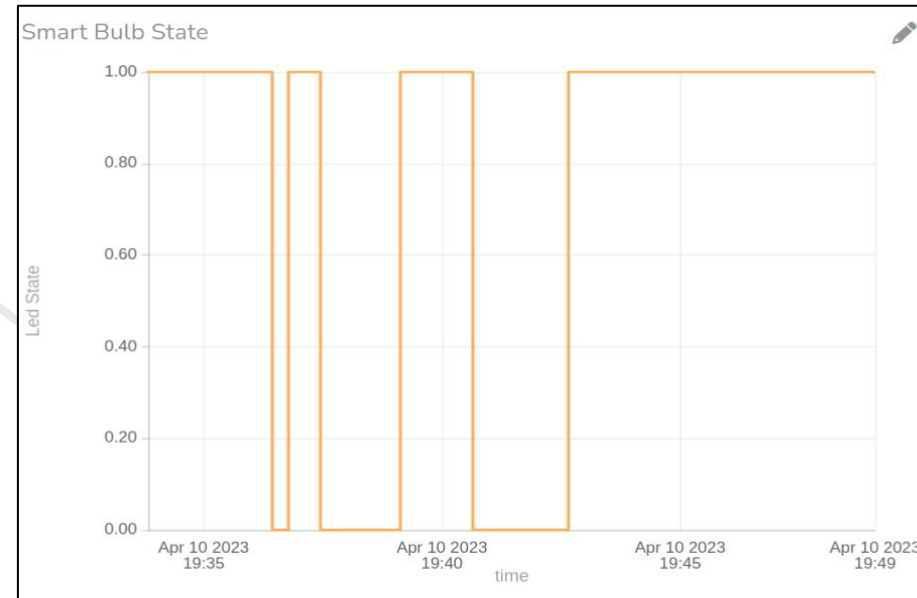# Data Plots

Using Ubidots Smart Bulb
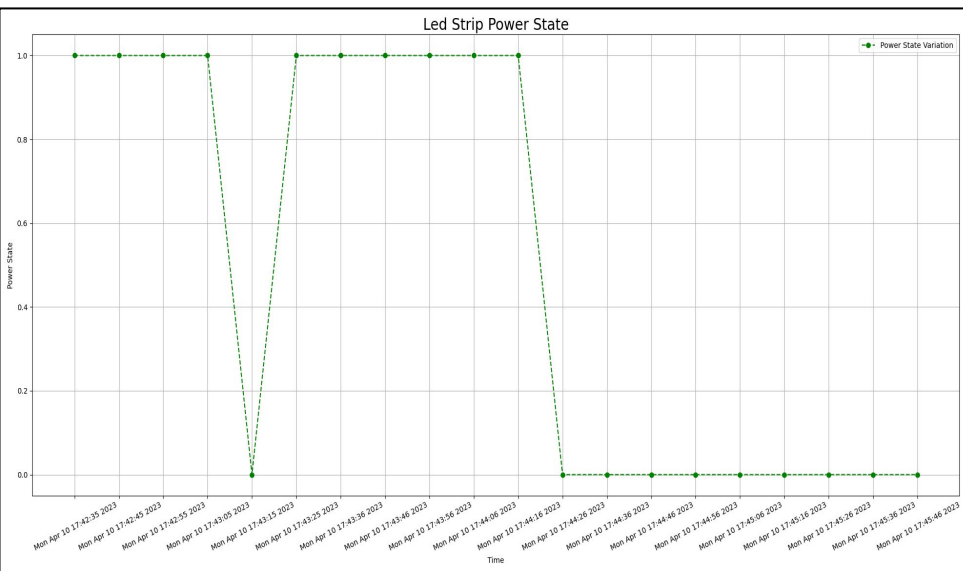
Using CSV Data for Smart LED

Thank You