JAIN INSTITUTE OF TECHNOLOGY
Dept. of Computer Science and Engineering.

Internship presentation on

“HOME AUTOMATION USING IOT”

Project guide:

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- Supply Chain Management (SCM);
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INTRODUCTION

- The internet of things (IoT) is a system of interrelated computing devices , mechanical and digital machines are provided with a unique identifies (UID’s) and the ability to transfer the data over the network without requiring a human-to-human or human-to-computer interaction.

- Smart Home using the IOT. The main aim of this system is to build a smart home device which can be used to control the home appliance via Internet.

- The electrical and electronics appliances in the home such as lights, fan, fire alarm , kitchen timer etc.., can be controlled using this technique.

- The wireless smart home system is an integrated system to facilitate elderly and disabled people with an easy to use home automation system that can be fully operated based on speech commands.

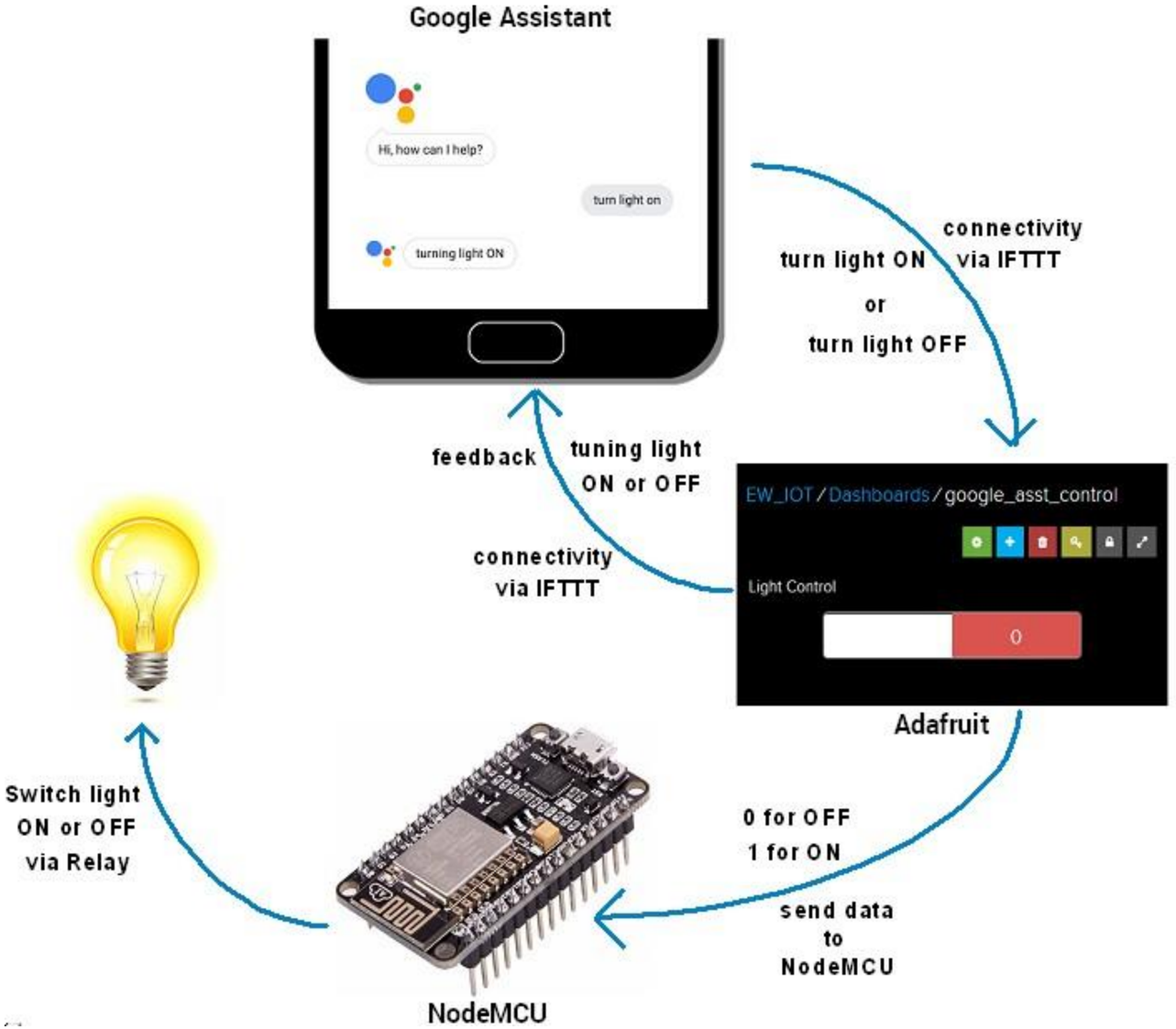
HARDWARE REQUIREMENTS

- NodeMcu(ESP8266 WIFI Module)
- Relay(2 or 4 Channel 5volt)
- Jumper wires(male to female and female to female)
- Bread Board
- Bulb
- Wire
- Switch

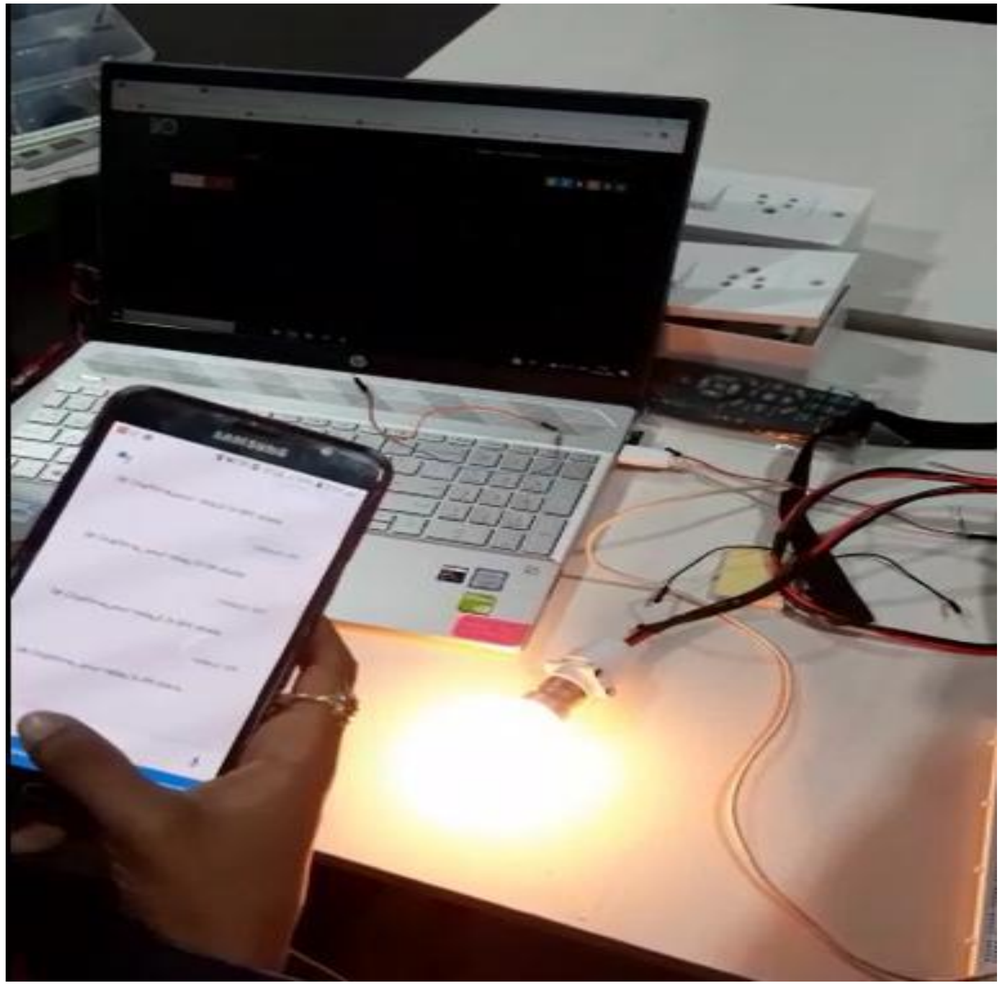
SOFTWARE REQUIREMENTS

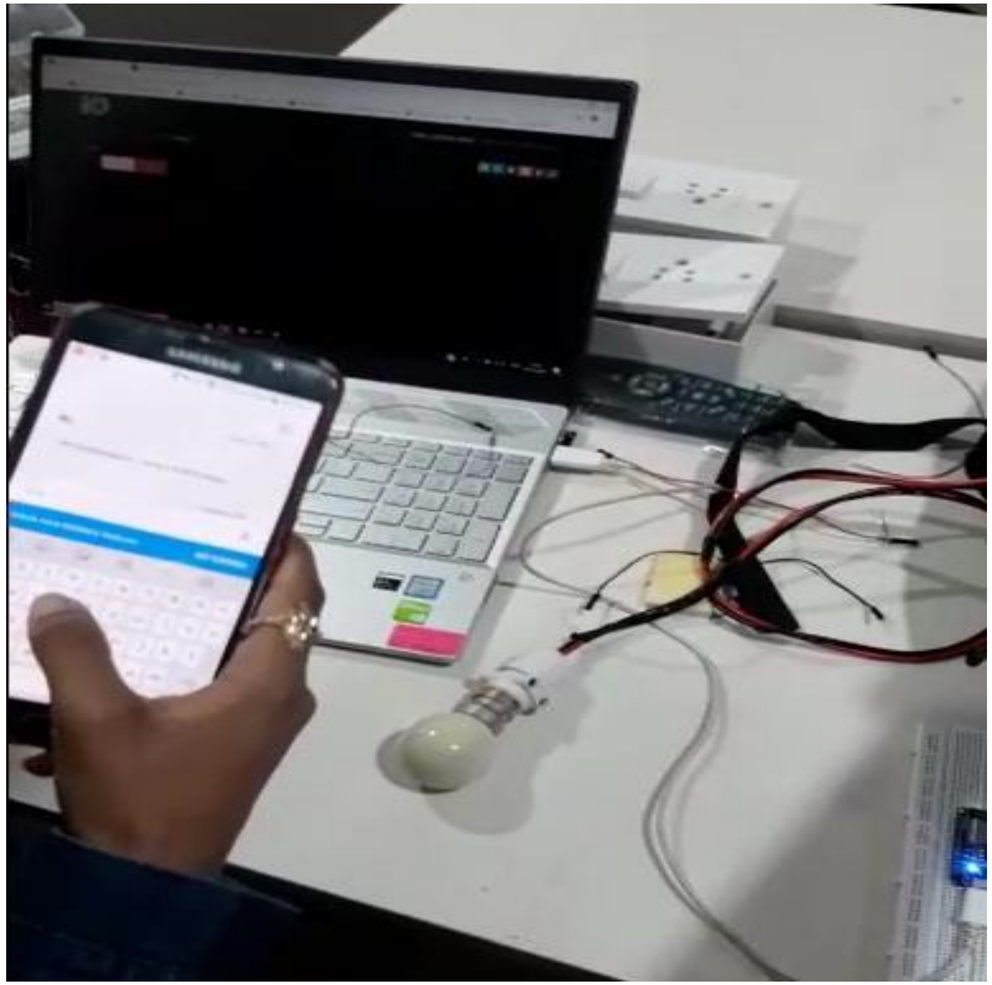
- Aurdino Software
- Ada-fruit web service
- IFTTT
- Google assistant
- Windows 10

DESIGN ARCHITECTURE



IMPLEMENTION AND EXECUTION

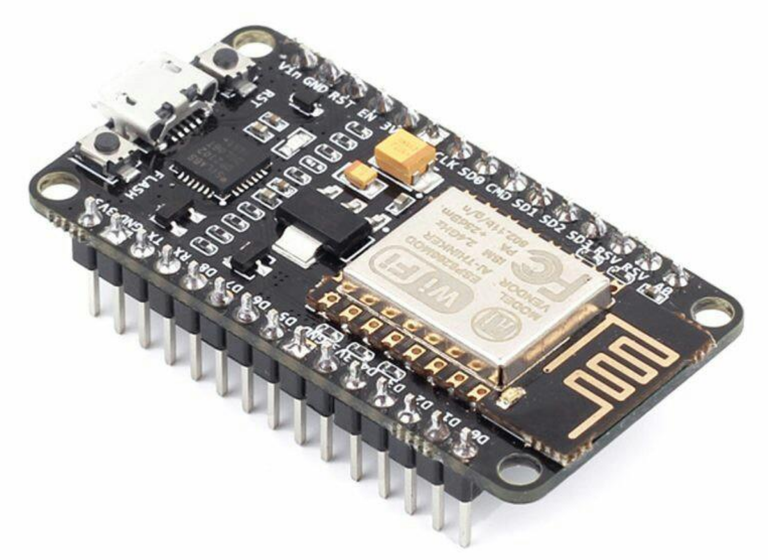




Light Turned ON and then OFF

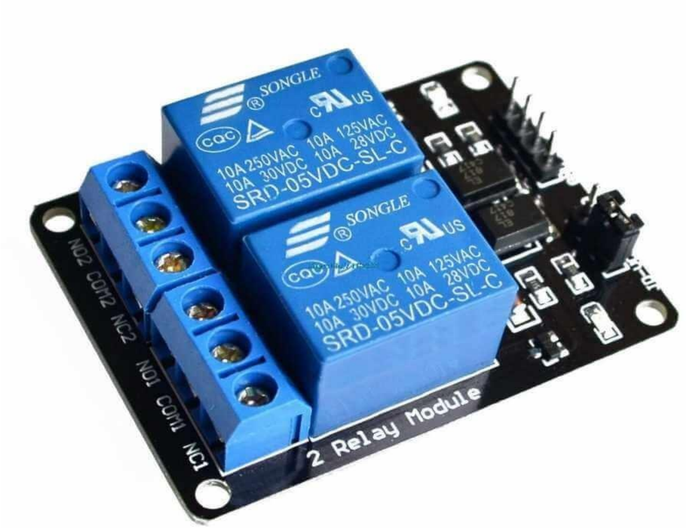
MODULES

NodeMcu (ESP8266 WIFI MODULE)



- The ESP8266 is a low-cost Wi-Fi chip with full TCP/IP stack and MCU (Micro control unit).
- This small module allows microcontroller to a Wi-Fi network and make simple TCP/IP connections.

RELAY (2 CHANNEL ,5V)



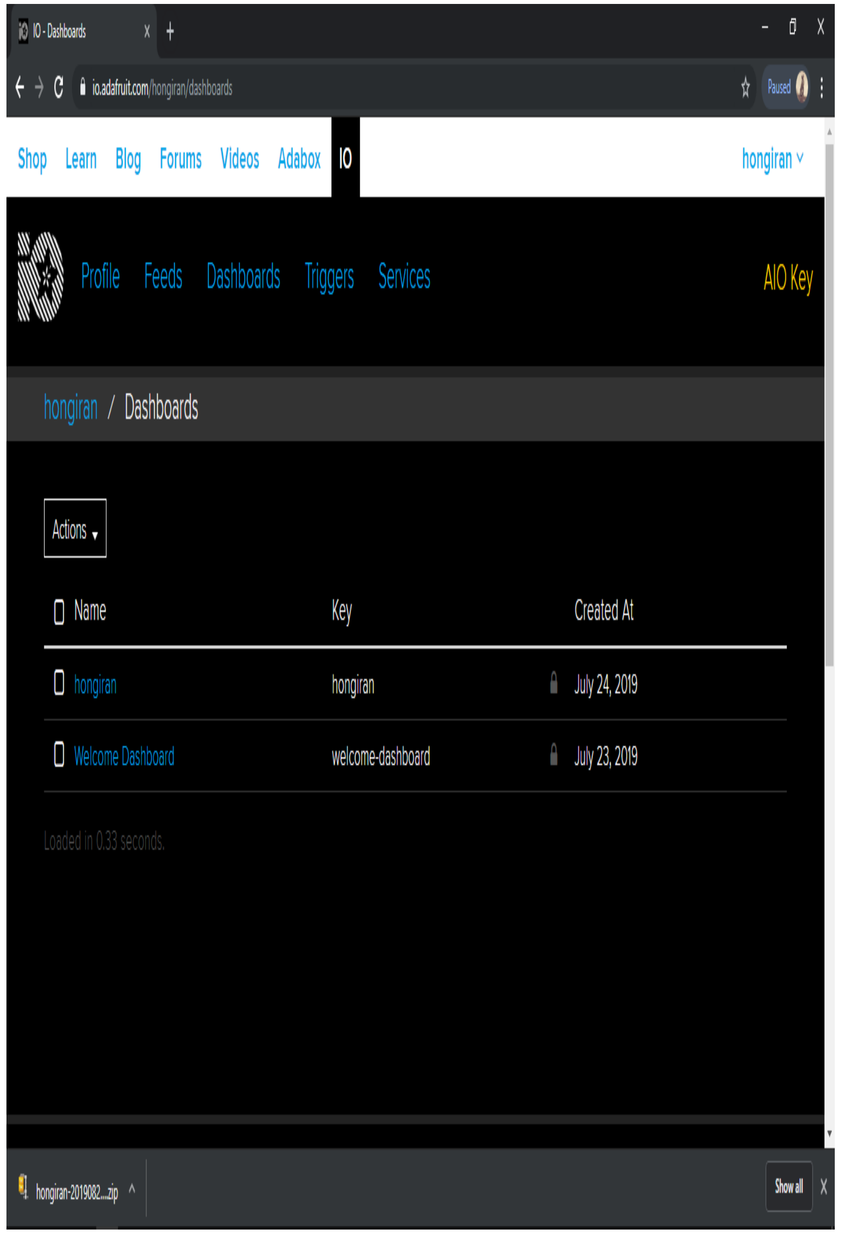
- A relay is a electrically operated switch
- Relays are used where it is necessary to control a circuit by a low-power signal.
- Relays protect electrical circuits from overload or faults.

ADA-FRUIT & MQTT

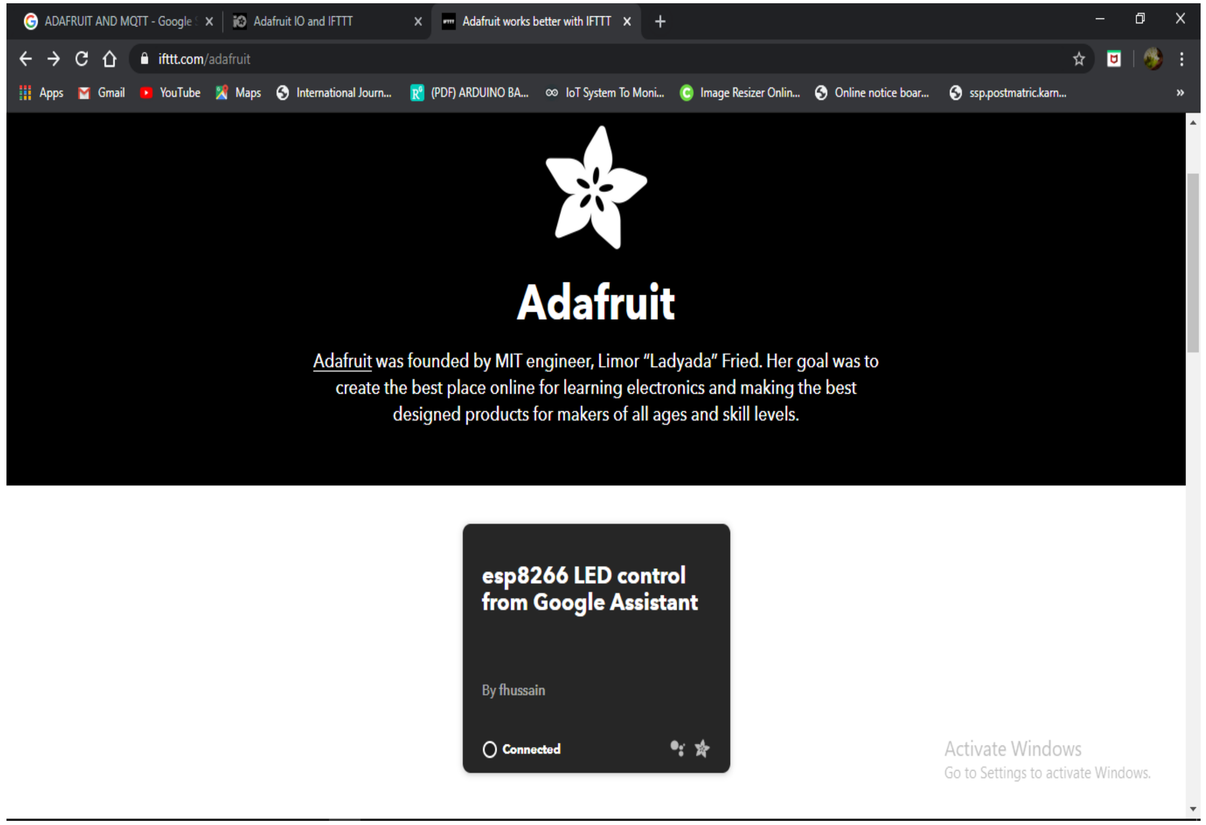
- **MQTT**, or message queue telemetry transport, is a protocol for device communication that **Adafruit** IO supports. ... For Python, Node.js, and Aurdino you can use **Adafruit's** IO

- Client libraries as they include support for **MQTT** .
- Connect your project to other internet-enabled device.
- Display your data in real-time, online
- Make your project internet-connected: Control motors, read sensor data, and more.

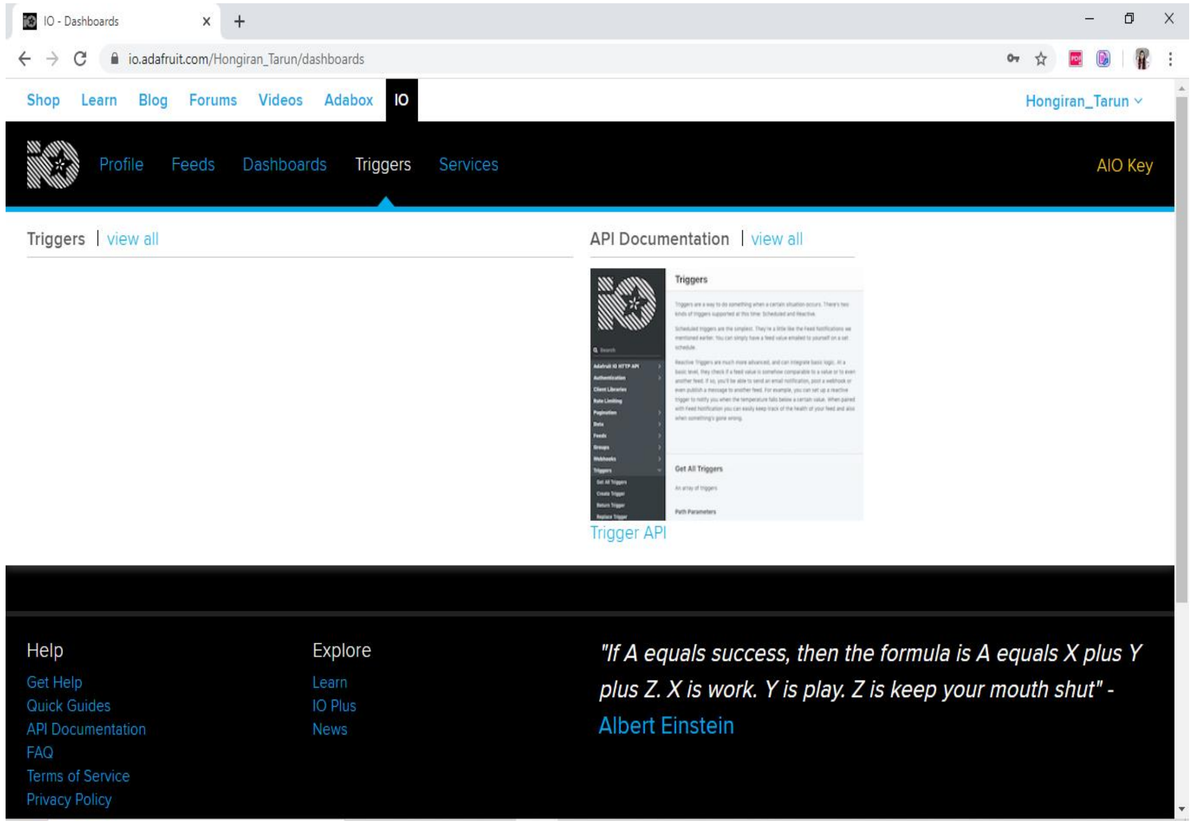
ADAFRUIT DASHBOARD



ADAFRUIT LOOKS LIKE WHILE CREATING THE APPLET BY GOOGLE ASSISTANT USING IFTTT



ADAFRUIT LOOKS LIKE WHILE CREATING THE TRIGGERS

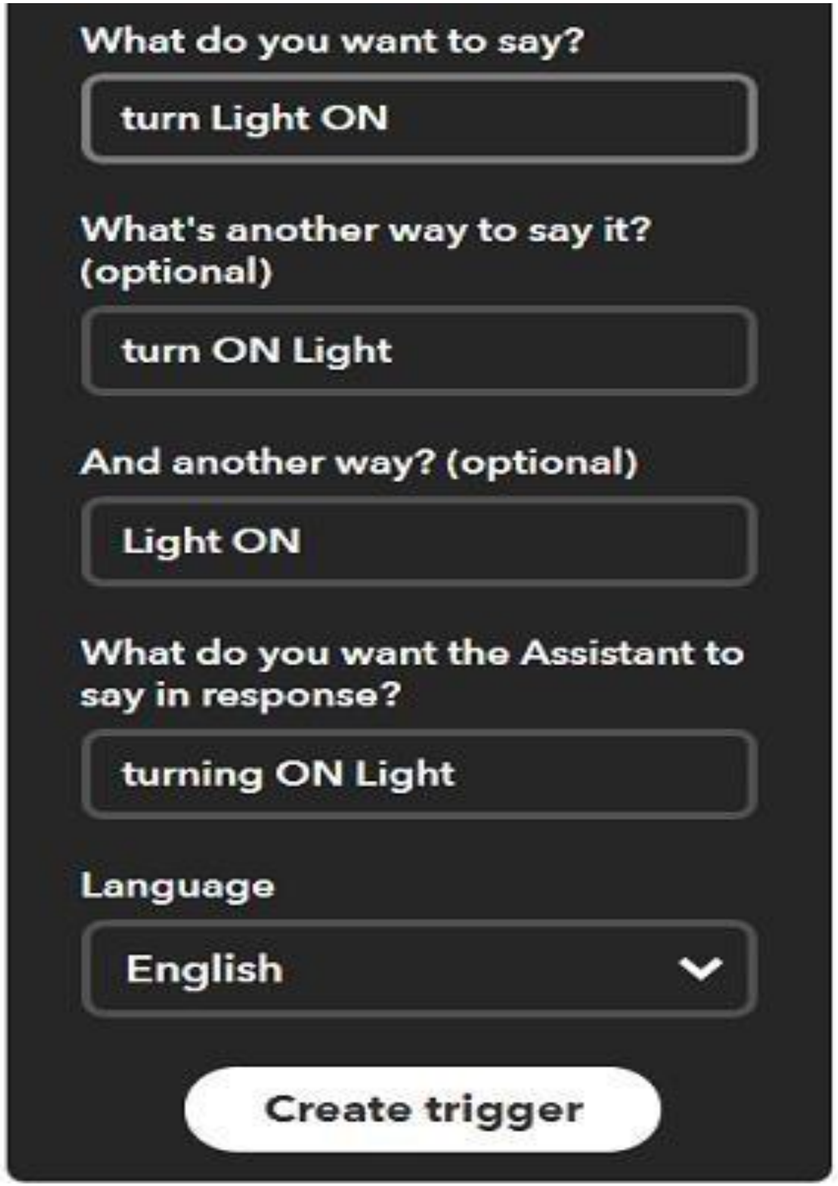


IFTTT

- If This Then That ,also known as IFTTT, is a free web-based service that creates chains of simple conditional statements , called applets .

- An applets is triggered by changer that occurs within other web services such as Gmail, Facebook ,Telegram, Instagram ,or Printrest.

CREATING IFTTT TRIGGERS

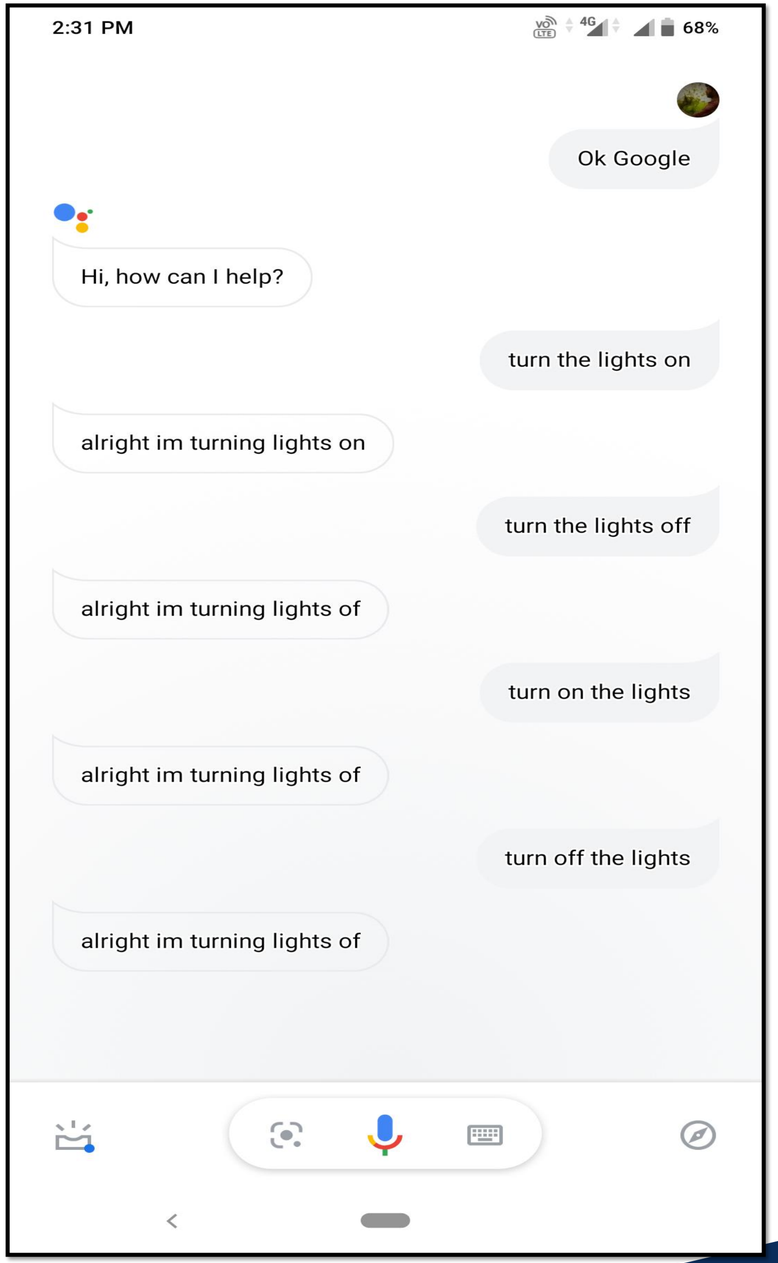


GOOGLE ASSISTANT

- **Google Assistant** is an artificial intelligence-powered virtual assistant developed by Google that is primarily available on mobile and smart home devices.
- Users primarily interact with the Google Assistant through natural voice, though keyboard input is also supported.

Control Home's Light using Google Assistant and NodeMCU

- I build an IoT based home automation application in which I control the 60 W bulb at remotely using AI based Google Assistant.
- Here, I used NodeMCU to read data from Adafruit server and act accordingly. 60 W bulb connected to NodeMCU via relay for controlling it voice command using google assistant.



CONCLUSION AND FUTURE SCOPE

- Smart Home using IoT is definitely a resource which is capable of make a home setting automated. People can be in command of their electrical devices via these Home Automation devices and set up the controlling actions in the workstation.

- In future this product may have high potential for marketing. In real time this project can be extended in future to ensure the high security through online HD spy camera.

- With this, the system can be incorporated in a whole building of any institution or residential building and can monitor from anywhere. This way, advantages of home automation can be more availed.


THANK
YOU