

# IVA (Intelligent Voice Activation) based Home Automation

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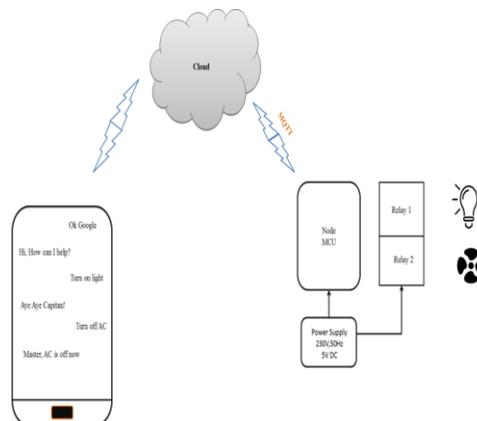
**ABSTRACT:** Nowadays, Home mechanization is developing rapidly and it is in slanting in the market. Home robotization framework depend on remote framework. Utilizing AI, we are building voice initiated insightful Home computerization in Google right hand. It controls wide scope of gadgets and security parts. We will plan this framework so that it is incorporated and clever. The NodeMCU is utilized to control the gadgets and the correspondence is finished by Wi-Fi(ESP8266).

**Key Words:** Google Assistant, IFTTT, Adafruit, Node MCU, Relay

## 1. INTRODUCTION

Home, it is where individual wants to be following a long tiring day. Individuals go to their homes subsequent to having an exceptionally long and upsetting working day. Some of them are exhausted to the point that they find actually difficult to make development from their agreeable, couches and beds. (It is called as lethargy however our venture searches for their solace). There are such a significant number of advancements/gadgets accessible that would assist them with switching their home apparatuses on and off, anybody can play their most loved music and so forth on a solitary direction from their own voice from the keen spots would make them easy. It would be so better for them in the event that they could warm the bathwater and change in room temperature just before they achieve home by giving a voice order. So when they achieve home they can discover the room temperature and the shower water is comfortable to them. Servants are a decent alternative for moguls to keep their homes early days. There are extremely less individuals in the general public who can manage the cost of such new keen innovation. As the expense is excessively high, anyway not every person can manage the cost of Google colleague or savvy home framework. Subsequently we have to structure a framework which can be reasonable. This task proposes such economical framework. Voice is utilized to offer directions to Google right hand. All parts are associated over the web utilizing Wi-Fi which puts the framework under iot

## 2. BLOCK DIAGRAM



## 3. SYSTEM PROPOSAL

In today's modern world of technology Automation is need and a trend also. We will be building an IVA based Home Automation system. IVA stands for Intelligent Voice Activation.

Current Home Automation systems are based on some low end technologies. We will be innovating

the new automation methodology using Voice activation methods. Voice activation will be done using Artificial Intelligence with Google Assistant. Google assistant is AI which gives response voices generated by user as shown in block diagram above. Commands to operate devices will be given through the Google Assistant i.e. Turn on light.

We need to control operation of the devices and a cloud channel for establishing communication with Android phone’s Google Assistant and controller. So here we will be using Adafruit cloud communicate with Node MCU by Publishing and subscribing the data. Afterwards data feed is forwarded to Node MCU using MQTT protocol.

Now Node MCU receives the data feed from Adafruit. Data feed is in the forms of states. Node MCU decodes the states and operates the devices according to states fed by MQTT broker.

1)Node MCU:

- 1. Node MCU is built around low-cost on chip system is called ESP 8266
- 2. This component is nothing but microcontroller unit type which handles circuits complexity operation
- 3. It will be good choice for our system purpose
- 4. It has 40 Pin connect operate of device

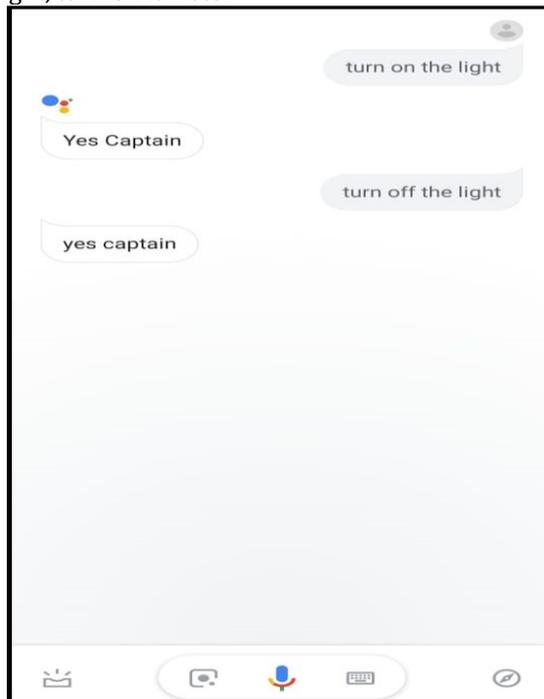
2)Relay board:

- 1. It is electromagnetic mechanically operated switch used to control circuit
- 2. By using relay we can several all circuit must be controlled by one signal
- 3. Some of relays are electrically operated switch with low power
- 4. The solid state relay can control power of circuits with any kind of movement parts instead use of semiconductor device to perform switching
- 5. Magnetic latching relay are required one pulse of coil power to move their contact in only one direction
- 6. Whenever we have applied power to one polarity on a single coil device operates unidirectionally.

4. Result

1. Google Assistant:

It is a natural language basis processing used for converting speech into sound and words. In IVA home automation, google assistant take command in the form of voice data and act accordingly. Command can be in the form of turn on light, turn on fan etc.



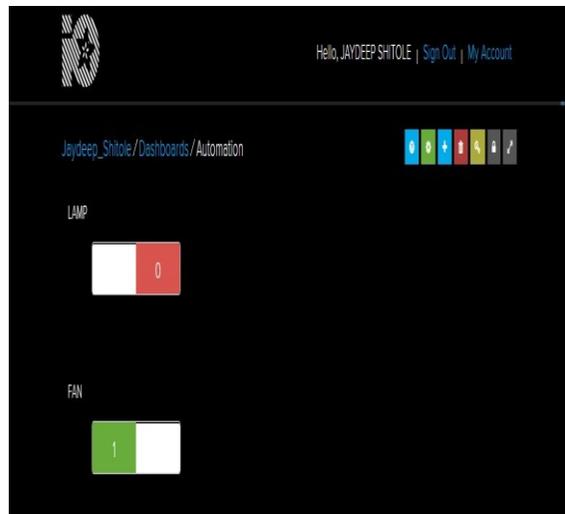
2. Adafruit Cloud:

Adafruit cloud platform is a storage platform in which information is feed in the form of dashboard. It is a multi tasking service provider.

After setting information in IFTTT ( If this then that) provides applet to choose service action. In this, IFTTT gives if this and then action like if LED=1 then, LED=ON or vice versa.



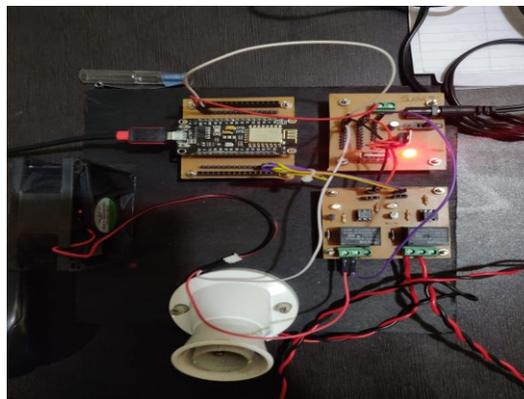
**BEFORE GOOGLE ASSISTANT COMMAND**



**AFTER GOOGLE ASSISTANT COMMAND**

### 3. MODEL:

Communication between Adafruit cloud and Node MCU is done by MQTT broker protocol. Saved action is transfer to Node MCU controller to control the load connected to it. The connected load is controlled through Relay which acts as a switch. Whenever google assistant command is matched with the data stored in Adafruit cloud through IFTTT then, relay acts as a switch to control load connected to it through Node MCU.



## 5. CONCLUSION

The primary point of this task was to plan a financially savvy voice controlled (Google Assistant) home computerization framework.. The propose of this framework is to built up a Home Automation, was effectively executed. This framework is exceptionally dependable, proficient and practical for the matured individuals and diversely handicapped individual who are not ready to ON/OFF switch.

As far as project work is we are able to control simple output device using MQTT app.

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