Voice Recognition Based Device Controlled Module

[1] K. Uday Kumar, [2]R.Puviarasi

Abstract--*The This is an intelligent home mechanization frame work that is exceptional in its own particular manner that is not normal for some other existing home computerization frame works that have been made before hand this undertaking centres around controlling that gadgets utilizing voice acknowledgement that is accomplished by using the publicity released API of Google right hand of Goggle Inc. Home computerization advances presented over these years from Zigbee mechanization to amazon Echo. Google Home and home from apple. Google home value is around (150$(USD) with an extra expense of gadgets to be associated with, the complete expense of the frame work comes to over 250$(USD), Apple home kit also is really progressively costly. More than US$ 100 (USD) for an easy maintenance only than the Google Home. Apple's Voice Assistant is priced at about 44 $(USD) per device, which is a bright light limited by Search's google assistant Amazon Echo and Siri. Home can be computerized inside 10$ (USD) and can control up to 8 apparatuses.Natural language voice directions are given to the Google Assistance of IFTTT (If This Then That) application the directions are decoded and afterward sent to the microcontroller, the microcontroller thusly controls the transfers associated with it as required, turning the gadget associated with the individual hand-off ON or OFF according to the clients solicitation to the Google Assistant. The microcontroller utilized is Node Mcu(ESP8266) and the correspondence between the microcontroller and the application is set up by means of Wi-Fi(Internet).*

Keywords-- *Voice command, Google assistant, appliances, control.*

I INTRODUCTION

The motivation behind this gadget is to diminish the exertion placed in by the client to control gadget physically. This frame work utilizes Google assistant s OK gave by google to speak with the ESP8266 Module and the clients .For instance, if available, customers give the appliance voice instructions to monitor the appliances at home, adjust the temperature of the indoor control device. Convise Google's assistant to get clear data and news and use it more to communicate with keen lights and learnable TVs to use chrome or some other clever tech. Along these lines, when entities were expected to get back home, they might find the room temperature, adjust the shower water according to their proper habits, and instantly loosen it and feel crozier and more basic than that. Human employees like waitresses were a road for moguls to keep their homes up, even now that technology has become sufficiently beneficial to the rich individuals of the public at large, because this device cost is rather high. Everybody is not, in any event, necessary for a human companion or a shrewd entity to pay for it. For now on, the

[1]*Saveetha School of Engineering, SIMATS, Chennai, India, Email: udaykumark411@gmail.com*

[2]*Saveetha School of Engineering, SIMATS, Chennai, India, Email: puviarasi@saveetha.com*

need for an economical and professional colleague is growing for ordinary people. This paper suggests this cost-effective work. We are used as the key components across a hand-off board requiring 418 transfers alongside ULN 2803 IC by the googo assistant, the IFTT, the Blizk device and the node micro-controller MCU ESP8266. Common voice language is used to provide Google Assistant instructions. All the parts are connected through the web using WiFi, which puts this research in the picture.

II   LITERATURE REVIEW

Vamsi Krishna Patchava, Hari Babu Kandala, Ravi Babu in, and related camera and video sensors used Pi raspberry and rendered home recognition and robotic legal structure on a web UI basis.

Sarthak jain, AnantVaibhav, Goyal's Jaze, explained the mechanisms that can be used to monitor the gadgets by reading the email account to the device's email address, which has been specifically changed.

Seong Ro Leeand Rajeev Piyare, exhibited an adaptable and minimal effort home control and observing frame work utilizing inserted smaller scale server with IP availability for handling gadgets wireless utilizing an mobile application.

Byungjoo Parkand Ronnie D. Caytiles utilized the progressions of versatile IP and incorporated it with the shrewd home framework. They got flexible IPV6 specifications to provide usability for the structure and planning for Shrewd home service on MIP.

Ana Marie D. Happen. The system that used Apple Inc. managed Siri invention to manage the system used in various voice guidance was developed by Siri. Siri designed a method. They used an outdated server to make Siri useful.

III PROBLEM STATEMENT

It would be safer if anything, for instance, had been done to steam the shower water and adjust the temperature until they enter their homes simply by giving a voice order. And when people were coming home, they might find the room temperature, the shower water was acclimatized and automatically relax and feel more crozier or maybe even more clearly.

Human workers such as maids have been a way to hold moguls in the past. Indeed even the wealthy people of the public at large are being acknowledged with proposals on modern, lively home appliances, even now when creativity is useful enough, because such device costs are slightly high. Anyone, however, is not well enough to bear the expense of an individual right hand, or a genius home machine. The need to find a fair and watchful right hand for traditional families therefore continues to grow.

IV PROPOSED MODEL

The project's goal is to combine the Google Assistant framework for home control of apps. Earlier a Google Assistant API was launched by Google. The proposed model uses a web server and an android application to control devices both using mobile and also remotely using wifi through voice commands.

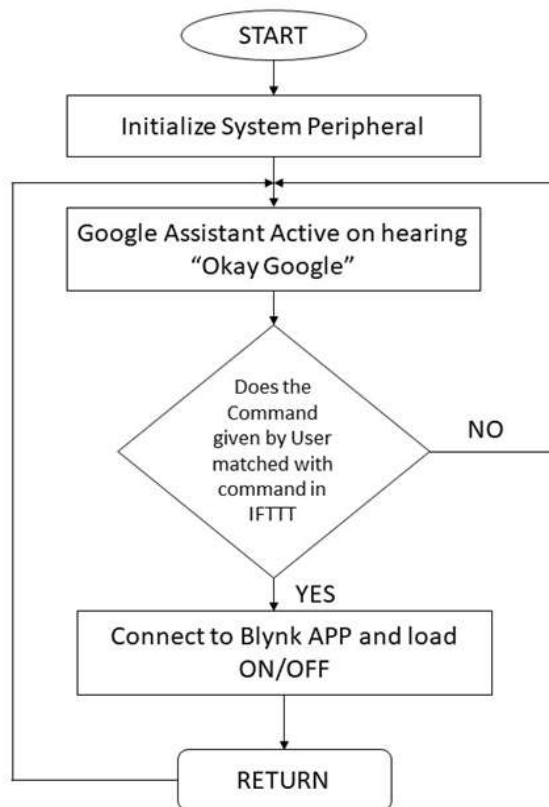## V METHODOLOGY AND WORKING

Figure 1: Methodology of proposed model

The gadget comprises of NodeMcu ESP8266 WiFi module, a 5V 4channel hand-off module, hand-off power supply. This module comprises of a product end and equipment end. The google partner awakens on hearing "OK google" voice order. When the google colleague awakens, voice directions can be given to it to control the machines.

i.   The app will communicate with the commuting app. This also may allow other equipment such as lights and fans to be enabled / off. It is known as the 'Control Unit'.

ii.   The product: Blynk, the IFTTT program and the Google Assistant are the results of the strategy and are included in the Android gadget.

The Control Module contains a 4/8 channel Relay board with the Node MCU-Microcontroller. ULN 2803 IC is used for handling the transitions by hand-offs. The Android gadget Blynk app needs to speak to the microcontroller and gives the ideal sign via the Internet.
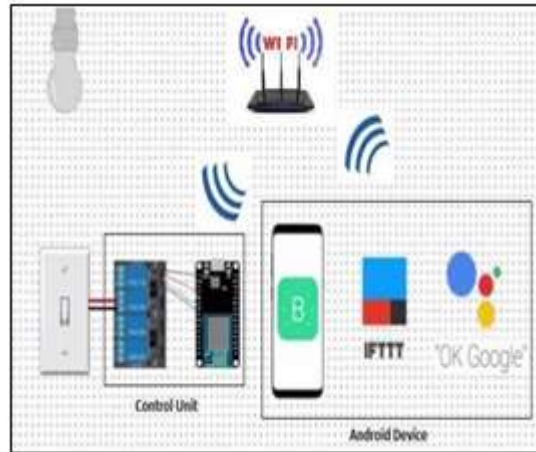
Figure.2: Basic System Architecture

On the off chance that the voice direction given to the Google Assistant matches with the content directions present in the IFTTT webserver, the responsive activity pronounced in the IFTTT web server by the client was taken by the ESP8266 module and the comparing pin of the module was refreshed.
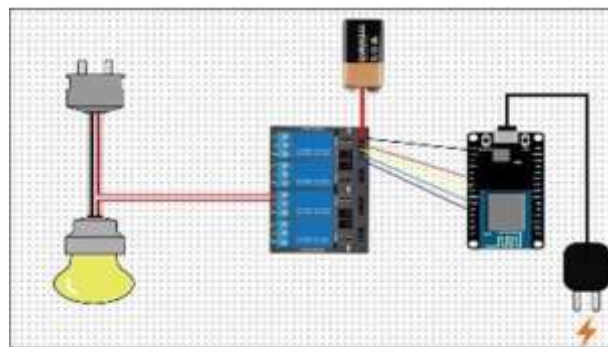

Figure 3: Connections

NodeMCU(ESP8266):

The NodeMCU is an open-source programming and enhancement state of the system, which operates with an unusually modest System-on-a-Chip (SoC) called the ESP8266. The ES P8266 has all the essential elements in the specialized computer: CPU, RAM, wireless fiber and an integrated working frame and SDK. The ESP8266 is designed and built by Express. The ESP8266 chip costs just USD $2 per piece when purchased at scale. This sets an astonishing decision for this structure of the structure.

Figure 4: NodeMCU

RELAY BOARD:

Figure 5: Relay Board

An electromagnetic transition is a relay. It is implemented by adding a little microampere to it. A transfer is typically used as a type of switch, a controlled switch, in a loop. There are different forms of transitions and they operate at different tensions. The voltage to activate it must be regarded at the stage where a circuit is installed. The hand-off circuit is used in this context to turn the ON / OFF devices. The NodeMCU microcontroller produces the high / low signals. If the transmission of a device is carried out by a low voltage, it is killed and switched on at the point where the high voltage is provided. The amount of devices can be adjusted according to the requirements of the customer.

ULN 2803 IC:

As a transfer driver, ULN 2803 IC is being used. It is a high voltage transistor array IC used with microcontrollers especially, where high power loads are to be driven. The IC consists of eight NPN Darlington transistors for the replacement of loads associated with the yield with standard Clamp-diodes. This IC is commonly used for high loads such as lamps, transfers, motors etc.

SOFTWARE:

The product of the framework proposed comprises of for the most part the Blynk Application and the IFTTT application.

BLYNK APPLICATION:

Blynk is a website for managing Arduino, Raspberry Pi, Raspberry Pi and NodeMCU software, and several specific web sheets. The Internet of Things was planned for Blynk. It can remotely control machinery, show sensory data, save data, view it and do many other things that are cool. The agreement is necessary for Blynk App; we have it established as needed. We start with a company and then pick the microcontroller that we use. Afterwards, the switch grabs the pins of the microcontroller for each transfer. When this occurs, Blynk must give a checksum tokens for that specific function to the registered email address. This token should be found and leave aside for use during the NodeMCU programming and the IFTTT framework setup.
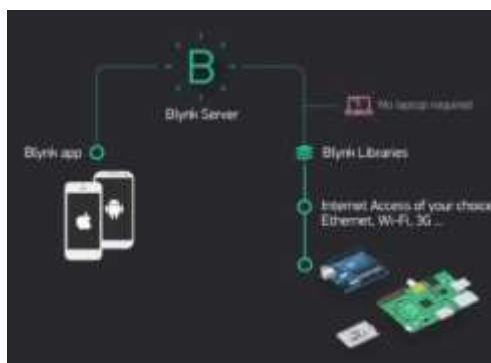
Fig.6: Functioning of Blynk Application.

IFTTT APPLICATION:

IFTTT is called "out of chance," by the limiting programming articulation. IFTTT has been both a website and a versatile application which has propelled in 2010, and the slogan is "Set the web to work for you." You are thinking of using IFTTT to robotically add anything from your most popular applications and pages to powerful adornments and sophisticated gadgets. What the company does to provide an interface between software, gadgets and administrativity of various engineers to cause at least one digitalization, like apps, gadgets and administrative systems. Here, the IFTTT function is used to fix any problems between the Blynk application and the Google Assistant instructions.
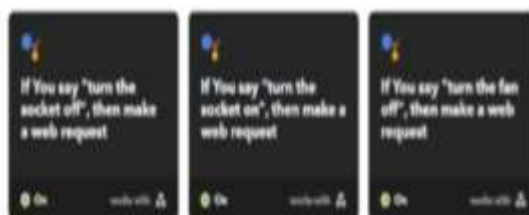

Fig.7: Screenshot of IFTTT Application after Creating Several Applets

RESULTS:

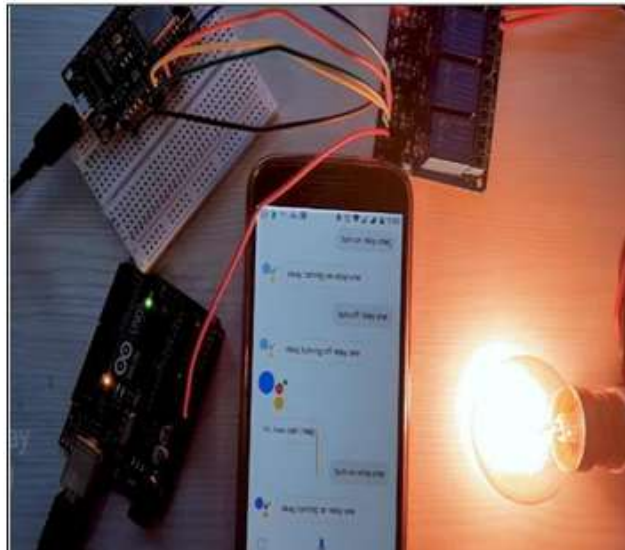Fig.8: Light initially OFF when no voice command is given

Fig.9: Light turned ON when a voice command is given to google assistant

VI CONCLUSION

The aim of this paper was to suggest a smart, Google Assistant (voice controlled) domestic robotic device that controls specific machines found at home. The technique discussed was effective, because the GACHA program was successfully implemented (Google Assistant Controlled Home Automation). Therefore, this structure is fundamentally solid and competent for the experienced person who is able to distinguish on a wheel sitting, which cannot hit the interchange turn ON / OFF and rely on the other person.

REFERENCES

1. Manish Prakash Gupta, "Google Assistant Controlled Home Automation", International Research of Journal of Engineering and Techcnology, volume:5.

2. Srinath, Mummaka Sai, Manepalli Nanda Kishore, and MD Anto Praveena. "Interactive home automation system with google assistant." International Journal of Pure and Applied Mathematics 1119.12 (2018): 14083-14086.

3. Khan A, Prakash G. "Design and implementation of smart glass with voice detection capability to help visually impaired people," International Journal of MC Square Scientific Research. Vol. 9, no. 3, pp. 53-59, 2017.

4. Patchava, Vamsikrishna, Hari Babu Kandala, and P. Ravi Babu. "A smart home automation technique with raspberry pi using iot." 2015 International conference on smart sensors and systems (IC-SSS). IEEE, 2015.

5. https://codeometry.in/home-automation-using-nodemcu-and-google-assistant/

6. IFTTT: https://ifttt.com/discover https://www.pocketlint.com/SmartHome/SmarHomenews

7. Blynk : https://www.blynk.cc/ https://docs.blynk.cc/

8. NodeMCU: https://nodemcu.readthedocs.io/en/master https://iotbytes.wordpress.com/nodemcupinout

9. Google Assistant: https://assistant.google.com/intl/en_in/

10. ULN2803 IC working: http://www.gadgetronicx.com/working-of-uln2803-ic/

11.   R. Puviarasi, Mritha Ramalingam, Elanchezhian Chinnavan, "Self Assistive Technology for Disabled People – Voice Controlled Wheel Chair and Home Automation System" International Journal of Robotics and Automation (IJRA) Vol. 3, No. 1, March 2014, pp. 30~38 ISSN: 2089-4856.

12.   Simpson RC, Levine SP. "Voice control of a powered wheelchair". IEEE Trans Neural System Rehabilitation Eng. 2000; 10: 122-125.

13.   Kang, Byeongkwan, et al. "IoT-based monitoring system using tri-level context making model for smart home services." 2015 IEEE International Conference on Consumer Electronics (ICCE). IEEE, 2015.

14.   https://www.arduino.cc/

15.   http://developer.android.comltools/studio/index.html

16.   JeyaPadmini, K.R.Kashwan, "Effective Power Utilization and Conservation in Smart Homes Using loT", 2015 International Conference on Computation of Power, Information and Communication, 2015

17.   http://smartcities.gov.in/

18.   Kamilaris, Andreas, and Andreas Pitsillides. "Towards interoperable and sustainable smart homes." 2013 IST-Africa Conference & Exhibition. IEEE, 2013.

19.   Gaikwad, Pranay P., Jyotsna P. Gabhane, and Snehal S. Golait. "A survey based on Smart Homes system using Internet-of-Things." 2015 International Conference on Computation of Power, Energy, Information and Communication (ICCPEIC). IEEE, 2015.

20.   AJ, E., and M. Jagadeeswari. "Control of Electrical Appliances through Voice Commands." IOSR Journal of Electrical and Electronics Engineering (IOSR-JEEE) 9.1.

21.   Baig, Faisal, Saira Beg, and Muhammad Fahad Khan. "Controlling home appliances remotely through voice command." arXiv preprint arXiv: 1212.1790 (2012).