

HOME APPLIANCES CONTROL USING GOOGLE ASSISTANT

V.MANASA¹,P.THEJA², K.MOUNIKA³,P.MUNIRATHNAM⁴,S.PRAVEENA⁵

¹Associate Professor, ^{2,3,4,5}B.Tech Final Year Students

Department of EEE

Narayana Engineering College Gudur, Andhra Pradesh, India.

Abstract : In the advanced technology , life is getting less difficult and less demanding in all viewpoints. In this day and age Programmed frameworks are being favored over manual framework. the fast increment in the quantity of clients of web over the previous decade has made Web an integral part of life, and IoT is the most recent and rising web innovation. Web of things is a developing system of regular protest from mechanical machine to purchaser products that can share data and finish assignments while you are occupied with different exercises. Home Automation system (HAS) utilizing IoT is a framework that utilizes PCs or cell phones to control fundamental home capacities and highlights naturally through web from anyplace around the globe, a mechanized home is some of the time called a brilliant home. It is intended to spare the electric power and human vitality. The home mechanization framework contrasts from other framework by enabling the client to work the framework from anyplace around the globe through web association.

In this paper we show a Home Automation system(HAS) utilizing Adafruit.io that joins with IFTTT and google assistant , to give the client voice control of different lights, fans, and machines inside their home and putting away the information in the google assistant.

Keywords – IOT, ADAFRUIT, RELAY, NODEMCU

I. INTRODUCTION

Today we are living in 21st century where automation is playing important role in human life. Home automation allows us to control household appliances like Light, door, fan, AC etc. It also provides home security and emergency system to be activated. Home automation not only refers to reduce human efforts but also energy efficiency and time saving. The main objective of home automation and security is to help handicapped and old aged people who will enable them to control home appliances and alert them in critical situations.

Existing, well-established systems are based on wired communication. Examples include BAC net, Lon Works and KNX . Employing a traditional wired automation system does not pose a problem as long as the system is planned before and installed during the physical construction of the building. If, however, already existing buildings should be augmented with automation systems, this requires much effort and much cost since cabling is necessary. Obviously, wireless systems can come to help here. In the past few years, wireless technologies reached their breakthrough. Wireless based systems, used every day and everywhere, ranges from wireless home networks and mobile phones to garage door openers. As of today, little comparative research of wireless automation standards has been done, although such knowledge would provide valuable information to everyone looking for the most suitable system for given requirements.

2. DESCRIPTION OF THE CIRCUIT DIAGRAM

1. We'll have to connect the Node MCU with the Relay board you can choose to do it with a bread board or without. But I prefer doing it using a Breadboard.

2. Connect the D3 pin of Node MCU with Pin 1 of Relay. Similarly connect D4 pin of Node MCU with Relay pin 2, D5 with Relay 3 and D6 with Relay 4.
3. Connect Ground Pin of Relay with Ground Pin of Node MCU.

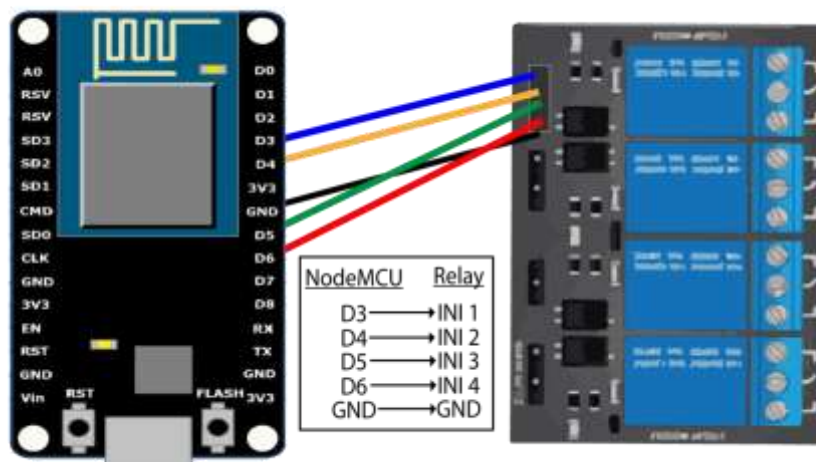


Fig.7.4: Node MCU Core Connected To Relay Coil

1. Now to power up the NodeMCU you can use a normal phone charger, just make sure its voltage is not too high. And to power up the Relay board, you can use a battery or a separate breadboard power supplier.
2. As we are using a four-channel relay you can connect at most 4 electronic appliances to the Relay and control them over the internet.
3. Now if you want to connect your household appliances like Fan, Lights etc. which are connected to the main power of your house, I would recommend you take the help of a professional electrician and ask him/her to connect those appliances to the relay can cause a serious damage. At this point, we have a fully functional connection between the NodeMCU, adafruit.io, iftttapp, and our electrical appliances. So, you can directly run your electrical appliances through voice from your phone and turn the electrical appliances on or off using the voice that we created in the adafruit.ioapp . connect the NodeMCU with the Google Assistant and control the appliances using voice commands,

4. HARDWARE:

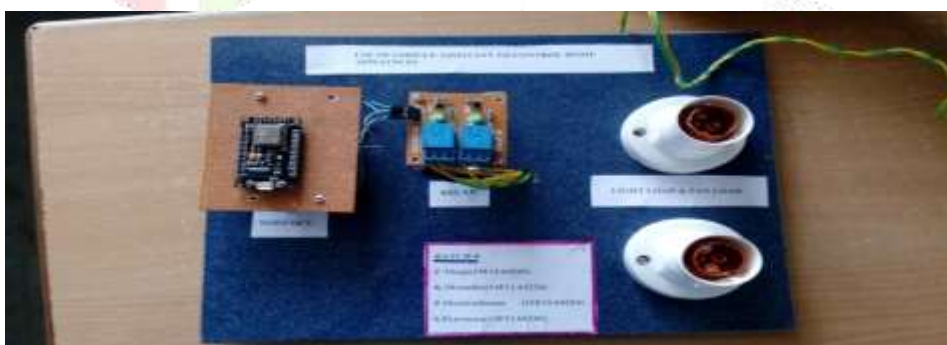


Fig:-Shows The Lights/Fan ON/OFF Condition By Using Adafruit App.

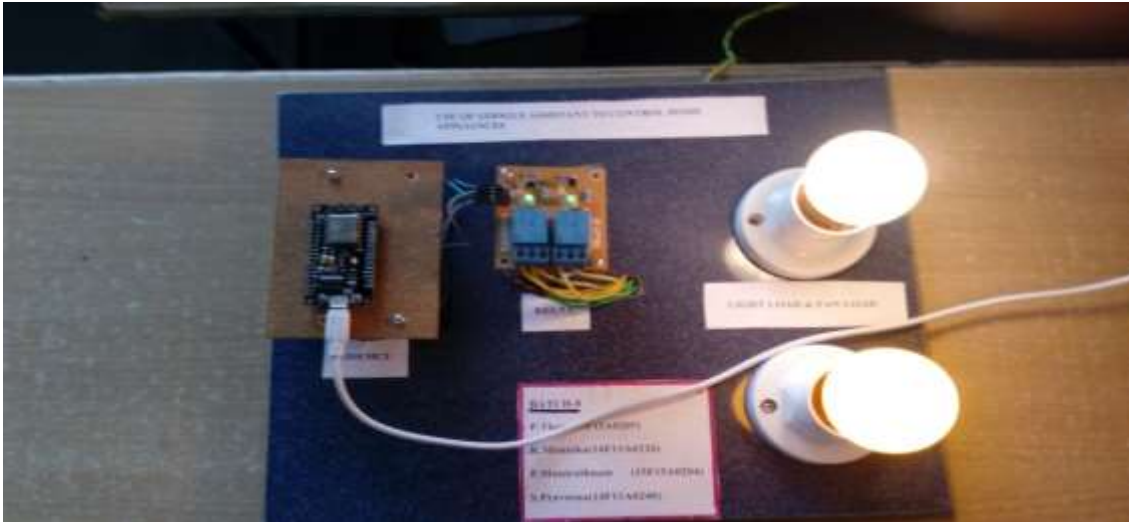
Hardware Output:-

FIG: Hardware Implementation of Esp8266 Voice Control With Google Assistant Andadafruit Iot.

HARDWARE COMPONENTS:-**RELAY:-**

A transfer is an electrically worked switch. Numerous transfers utilize an electromagnet to mechanically work a switch, yet other working standards are additionally utilized, for example, strong state. Transfers are utilized where it is important to control a circuit by a different low-control flag, or where a few circuits must be controlled by one flag. The principal transfers were utilized as a part of long separation broadcast circuits as intensifiers: they rehashed the flag rolling in from one circuit and re-transmitted it on another circuit. Transfers were utilized broadly in phone trades and early PCs to perform sensible activities.

NODEMCU:-

The ESP8266 Wi-Fi Module is an independent SOC with coordinated TCP/IP convention stack that can give any microcontroller access to your Wi-Fi arrange. The ESP8266 is able to do either facilitating an application or offloading all Wi-Fi organizing capacities from another application processor. Each ESP8266 module comes pre-customized with an AT summon set firmware, which means, you can basically connect this to your Arduino gadget and get about as much WiFi-capacity as a WiFi Shield offers (and that is simply out of the case)! The ESP8266 module is a greatly savvy board with a gigantic, and consistently developing, group.

This module has a sufficiently effective on-load up handling and capacity ability that enables it to be coordinated with the sensors and other application particular gadgets through its GPIOs with negligible advancement in advance and insignificant stacking amid runtime. Its high level of on-chip joining takes into account insignificant outer hardware, including the front-end module, is intended to involve negligible PCB territory. The ESP8266 underpins APSD for VoIP applications and Bluetooth coexistence interfaces, it contains a self-aligned RF enabling it to work under every working condition, and requires no outer RF parts.

ADAFRUIT IO:

Adafruit Industries is an open-source hardware company based in New York City. It was founded by Limor Fried in 2005, in her Massachusetts Institute of Technology dorm room. The company designs and manufactures a number of electronics products, sells a wide variety of electronics components, tools, and accessories via its online storefront, and produces a number of learning resources, including written tutorials, introductory videos for beginners, and the longest running live video electronics show on the internet.

The name Adafruit comes from Fried's online moniker "ladyada", itself an homage to computer science pioneer Ada Lovelace. The company's goal is to get more people involved in technology, science and engineering. Project kits are designed to deliver practical systems—not simply academic exercises—and to encourage more women into the field.

IFTTT USING GOOGLE ASSISTANT:-

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

An applet is triggered by changes that occur within other web services such as Gmail, Facebook, Telegram, Instagram, or Pinterest. For example, an applet may send an e-mail message if the user tweets using a hashtag, or copy a photo on Facebook to a user's archive if someone tags a user in a photo-

In addition to the web-based application, the service runs on iOS and Android. In February 2015, IFTTT renamed their original application to *IF*, and released a new suite of apps called *Do* which lets users create shortcut applications and actions. As of 2015, IFTTT users created about 20 million recipes each day. All of the functionalities of the Do suite of apps have since been integrated into a redesigned IFTTT app.

IFTTT is both a website and a mobile app that launched in 2010 and has the slogan "Put the Internet to work for you". The idea is that you use IFTTT to automate everything from your favorite apps and websites to app-enabled accessories and smart devices.



Fig:-Creating IFTTT

5. CONCLUSION:-

This is an ongoing project and our prime objective is to assist the handicapped/old aged people. This project gives basic idea about the controlling of home appliances and provides a security using android. In future it can be expanded to many other areas.

6. FUTURE SCOPE:

There are many possible future implementations for the project, with adding extra features for the user, improves efficiency and better ways to interface the system, to its individual components and to the user. Some of these future implementations include heightened security features, "smarter" control for high smart devices, phone applications, audio/video features, touch screen control, wireless access, voice recognition, easier navigation on screen display, and simpler user installation.

REFERENCES:

- [1] Mohamed Abd El-LatifMowad, Ahmed Fathy, Ahmed Hafez "Smart Home Automated Control System Using Android Application and Microcontroller" International Journal of Scientific & Engineering Research, Volume 5, Issue 5, May-2014 ISSN 2229- 5518
- [2] Arduino Uno Projects: <http://arduino.cc/en/Main/arduinoBoardUno>
- [3] Datasheet Bluetooth to Serial Port Module HC05: http://www.electronica60norte.com/mwfls/pdf/newBl_uetooth.pdf
- [4] Armando Roy Delgado, Rich Picking and Vic Grout "Remote- Controlled Home Automation Systems with Different Network Technologies" Centre for Applied Internet Research (CAIR), University of Wales, NEWI, Wrexham, UK
- [5] Ming Yan and Hao Shi "SMART LIVING USING BLUETOOTH BASED ANDROID SMARTPHONE" International Journal of Wireless & Mobile Networks (IJWMN) Vol. 5, No. 1, February 2013 DOI : 10.5121/ijwmn.2013.5105 65

[6] Folea, S. ;Autom. Dept., Tech. Univ. of Cluj-Napoca, Cluj-Napoca, Romania ;Bordencea, D. ; Hotea, C. ; Valean, H – “Smart home automation system using Wi-Fi low power devices” Published in: Automation Quality and Testing Robotics (AQTR), 2012 IEEE International Conference on Date of Conference: 24- 27 May 2012 Page(s): 569 – 574 Print ISBN:978-1- 4673-0701-7 ; INSPEC Accession Number: 12853582 Conference Location :Cluj-Napoca ; DOI:10.1109/AQTR.2012.6237775 ; Publisher: IEEE

[7] Chakradhar, B., Krishnaveni, S., and Naresh , D. 2013. “Bluetooth Based Home Automation and Security System Using ARM9”, International Journal of Engineering Trends and Technology (IJETT) , Vol. 4 Issue 9, Pg 4053-4058 [8]

Obaid, T. et al. 2014. “ZIGBEE BASED VOICE CONTROLLED WIRELESS SMART HOME SYSTEM”, International Journal of Wireless & Mobile Networks (IJWMN), Vol. 6, No. 1, Pg. 47-5

