

VOICE BASED HOME APPLIANCE CONTROL SYSTEM USING IOT

Kaviya S

Final Year M.Sc., Software Engineering
Periyar Maniammai Institute of Science &Technology, Vallam, Thanjavur

ChandraKumar Peter M

Assistant Professor, Department of Software Engineering

ABSTRACT

The Internet of things (IoT) is the system of gadgets, for example, vehicles, and home machines that contain hardware, software and availability which enables these things to interface, associate and trade information. It often happens that you forget to switch off some electric devices while leaving home for a journey. This will result in wastage of essentialness and even the contraption may get hurt as a result of overheating. Even if i remember that we have not switched off some devices, it may be difficult for us to come back and switch them off. Also, if we are away from home sometimes you have to turn on the lights at night. These are normally not possible in present condition. Most of the existing systems that are available in the market use a Raspberry Pi, echo, alexa or Arduino chipset that are programmed to control a set of devices inside a house, which are given instructions using a mobile application or a web-based UI. In proposed system offers a solution for this problem by using a mobile phone, a common electronic device like AC, tube light, fridge, and fan. Home appliances controlled by using our google assistance and also maintenance the data logs. The framework is actualized utilizing customary family machines Natural language voice directions are given to the Google Assistant and with the assistance of IFTTT (If This Then That) application and the Blynk application the directions are decoded and afterward sent to the microcontroller. This is achieved by utilizing the open sourced API of Google Assistant by Google Inc.

Keywords: IOT, Arudino, Google Assistant

INTRODUCTION

In this modern era, automation of everything is the need of the hour automation is the use of control systems and information technology to regulate equipment, industrial machinery, and processes, minimizing the need for human involvement. Internet has become an important part of human's social life and educational life without which they are just helpless. Automation plays an increasingly important role in the global economy and in day by day encounter. Designers work to connect robotized gadgets with numerical and hierarchical instruments to make complex frameworks for quickly growing parameters of uses and human activities. For the development of smart cities, there is a need to automate everything, so the concept of this system is an idea which is used to make the city smart. A Smart Home is one that provides comfort, security and gives the feeling of home to house members. Smart homes additionally give Energy productivity (low working expense) and comfort consistently, for each person at home. Home mechanization advancement and research is topping off an interest from the general public for increasingly normal and easily approach to collaborate with our home's machines, to screen our home for security purposes or to set up a procedure at separation. The automation industry is providing many systems and individual sensors that enables many applications within the field of home automation. This project is based on Internet of Things (IoT). Internet of Things is a network of devices such as electrical appliances for connectivity which enables these devices to connect and exchange data. This project represents a flexible way to control devices. In this project we are working on an android application where a user will provide voice commands for

controlling devices such as "Turn light on" which will be connected to raspberry pi and according to it the required process will work via Wi-Fi. This automation can be used majorly not only in home but offices and hospitals also user can register and authenticate himself/herself in android device and after successful login can give the input commands and operate the devices.

EXISTING METHODOLOGY

The existing systems that are available in the market use a Raspberry Pi,echo, alexa or Arduino chipset that are programmed to control a set of devices inside a house, which are given instructions using a mobile application or a web-based UI(user interface). It often happens sometimes, forget to switch off some electric devices while leaving home for a journey. This will result in wastage of vitality and even the gadget may get harmed because of overheating. Regardless of whether we recollect that we have not turned off certain gadgets, it might be troublesome for us to return and turn them off.

Voice Recognition Based Home Automation System

The discoveries propose that the framework works moderately well; nonetheless, there were a couple of cases that the framework couldn't perceive the substance appropriately. That implies that, any client can progressively include and evacuate electrical gadgets into the framework without the assistance of an expert. This paper proposes the improvement of a home mechanization voice order framework. It was structured an Android cellphone

application, which conveys in a nearby system with an Arduino board. So as to evaluate the framework, it was manufactured a scaled down living arrangement to test it in a genuine case situation. The framework was demonstrated utilizing a portion of the UML components in an approach to be adaptable, and versatile towards any habitation structure.

Voice Recognition Based Wireless Home Automation System

In this paper, a voice controlled remote shrewd home framework has been exhibited for older and impaired and incapacitated individuals. The proposed framework has two primary parts in particular Voice acknowledgment framework and remote framework. Then again ZigBee remote module has been utilized to execute the remote framework. The proposed framework can perceive the voice directions, convert them into required information design and send the information through the remote transmitter. In light of the got information at the remote collector related with the apparatuses, wanted exchanging tasks are performed. The proposed framework is an ease and low power framework in light of the fact that ZigBee is utilized here. The fundamental objective of this framework is to control home apparatuses utilizing voice directions.

Home Automation System for Paralyzed People

This paper exhibits the structure of the minimal effort voice acknowledgment-based home computerization framework for the physically tested individuals experiencing quadriplegia or paraplegia (who can't move their appendages however can talk and tune in) to control the different home apparatuses and can impel the bed height just by the voice directions as indicated by their need and solace. The proposed framework comprises of a voice acknowledgment module, Arduino uno microcontroller, transfer circuit to and a flexible bed. The voice acknowledgment module should be prepared first before it very well may be utilized to perceive directions. Upon fruitful acknowledgment of voice direction, the Arduino drives the relating load with the assistance of the hand-off circuit. The movable bed height can be set to the three unique modes according to the client solace and need. The precision of voice acknowledgment module is additionally estimated in various conditions. The test results approve the elements of the proposed framework. The outcomes demonstrate the framework can give extraordinary associate to the physically tested individuals with no third individual's aids.

Speech Recognition Module for Home Automation System Based On ZigBee

The perform multiple tasks taking care of framework that presents time delay, which isn't at all attractive in any application, in such case, the smaller scale controllers which can assume a key job as an installed framework configuration is progressively appropriate one. Here, we structure a summed up inserted framework application "voice-controlled home apparatuses" is the proof for the productive robotization, and is developed around the microcontroller and VRC is (Voice/discourse Recognizer unit).

In this paper, the mix of various parts are mounted in to a solitary gadget, which is additionally called a framework on chip. With the assistance of VLSI innovation, it ended up conceivable to grow rapid, with minimal effort, and power effective and little in size kind Integrated Chips. The Micro controller, which is utilized for this reason for existing is called IBP (Itty Bitty Processor) or installed processor because of the reality of its guidance execution speed. In this the home machines are controlled agreeing the directions given by the human and the directions are perceived by the discourse recognizer and the directions are handled by the miniaturized scale controller and burdens are controlled by the guidelines given to the small-scale controller by the software engineer. These directions are transmitted to the collector from transmitter through the zigbee remote correspondence Zigbee fills in as a trans receiver here; the directions of our discourse are transmitted to the recipient through zigbee from the discourse recognizer unit and the controller. The beneficiary side zigbee will get the directions from the transmitter and zigbee and after that to the controller and burdens are worked through these directions.

Voice Recognition Based Smart Home Control System

The perform multiple tasks taking care of framework that presents time delay, which isn't at all attractive in any application, in such case, the smaller scale controllers which can assume a key job as an installed framework configuration is progressively appropriate one. Here, we structure a summed up inserted framework application "voice-controlled home apparatuses" is the proof for the productive robotization, and is developed around the microcontroller and VRC is (Voice/discourse Recognizer unit).

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PROPOSED METHODOLOGY

It offers a solution for this problem by using a mobile phone, a common electronic device like AC, tube light, fridge, and fan. Home appliances controlled by using our google assistance and also maintenance the data logs.

The framework is executed utilizing standard family unit apparatuses Natural language voice directions are given to the Google Assistant and with the assistance of IFTTT (If This Then That) application and the Blynk application the directions are decoded and after that sent to the microcontroller. This is accomplished by using the publicly released API of Google Assistant by Google Inc.

IFTTT APPLICATION

In the event that This, Then That, otherwise called IFTTT is a free online support of make chains of basic contingent proclamations, called applets. An applet is activated by changes that happen inside other web administrations, for example, Gmail, Facebook, Telegram, Instagram, or Pinterest. For instance, an applet may send an email message if the client tweets utilizing a hashtag, or duplicate a photograph on Facebook to a client's document in the event that somebody labels a client in a photograph.

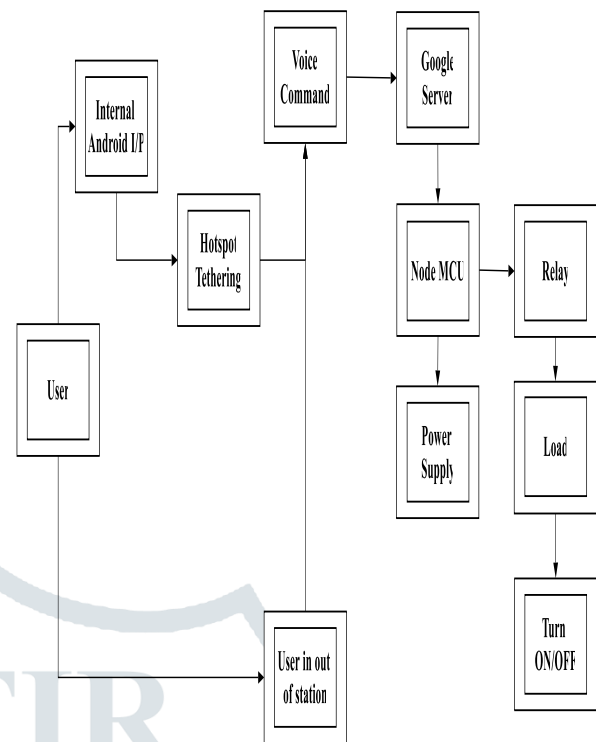
Notwithstanding the electronic application, the administration keeps running on iOS and Android. In February 2015, IFTTT renamed its unique application to IF, and discharged another suite of applications called Do, which gives clients a chance to make alternate route applications and activities. Starting at 2015, IFTTT clients made around 20 million formulas every day. The majority of the functionalities of the Do suite of applications have since been incorporated into an updated IFTTT application.

IFTTT is both a site and a versatile application. The free administration propelled in 2010 with the accompanying motto: "Set the Internet to work for you". It's changed a great deal lately, be that as it may. As of now, with IFTTT, you can interface every one of your "administrations" together so assignments are naturally finished. There are various ways you can interface every one of your administrations - and the subsequent mixes are classified "Applets".

Applets basically robotize your everyday work process, regardless of whether it's overseeing savvy home gadgets or applications and sites. Along these lines, for example, on the off chance that you claim the Philips Hue shrewd lighting framework, you could utilize IFTTT to naturally turn on a light every time you're labeled in a Facebook photograph. In another model, you could utilize IFTTT to consequently email perusers when they remark on your WordPress blog.

ARCHITECTURE

An Engineering Plot Is A Graphical Potrayal Of a Ton Of Thoughts That Are A Pieace Of A Design Including Their Models Segments And Portions



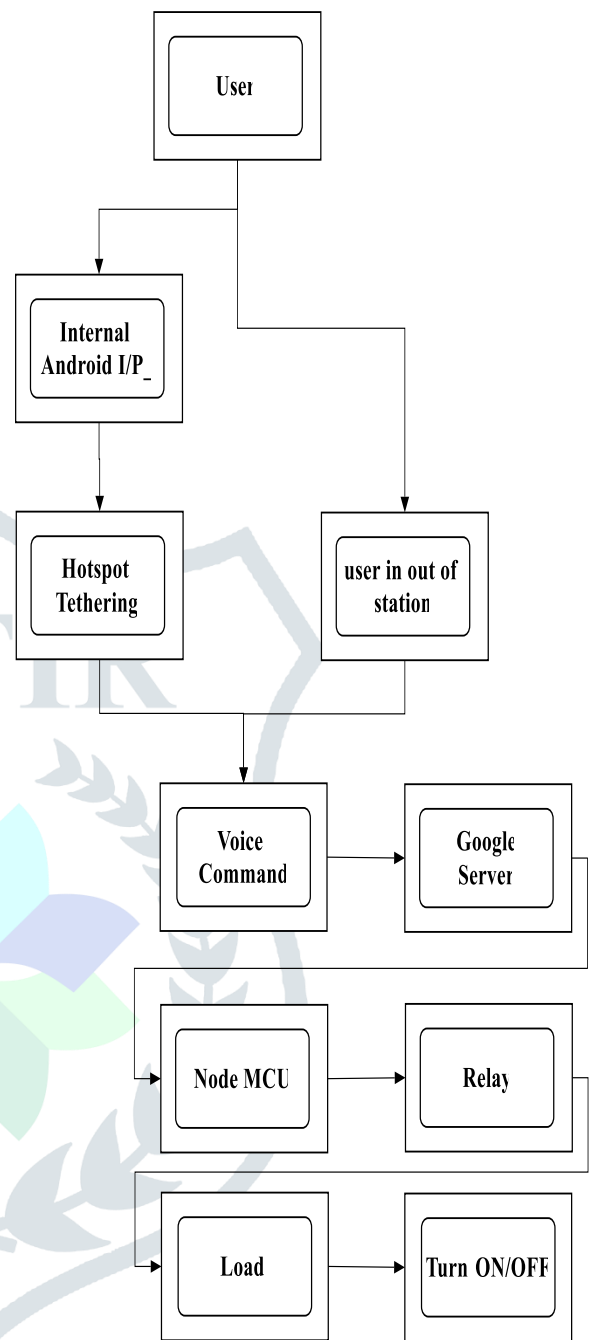
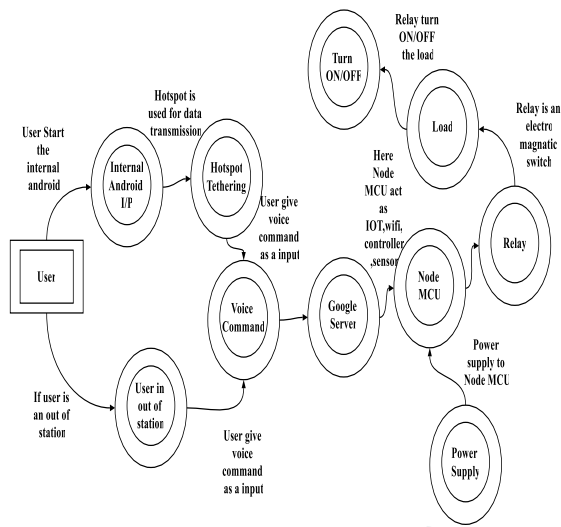
The Control Unit contains the microcontroller-NodeMCU and the 4/8 Channel Relay board. Transfer board utilizes IC to control the transfers. The Blynk application on an Android gadget speaks with the microcontroller and sends the ideal flag by means of the web. The hardware also called the Control Unit comprises of the NodeMCU microcontroller and the Realy board. NodeMCU's digital output pins are connected to the Relay pins of the Relay board. Finally, each Relay is connected to an appliance.

In this architecture user give the command in internal android or out of station or inside the room to tethering the hotspot then user give the voice command that command go in to the google server it passes to nodemcu then it will go to the relay board and switch over the current to pass it to the load what type of command you give it will reply

DATA FLOW DIAGRAM

An information stream outline (DFD) is a method for speaking to a stream of an information of a procedure or a framework (as a rule a data framework) The DFD likewise gives data about the yields and contributions of every substance and the procedure itself. An information stream graph has no control stream, there are no choice guidelines and no circles. Explicit activities dependent on the information can be spoken to by a flowchart. There are a few documentations for showing information stream graphs. For every datum stream, no less than one of the endpoints (source and/or goal) must exist in a procedure. The refined portrayal of a procedure should be possible in another information stream graph, which subdivides this procedure into sub-forms.

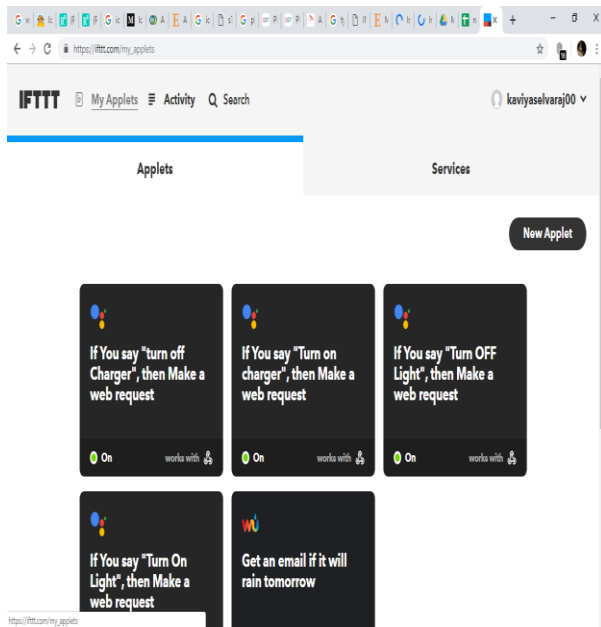
FLOW CHART



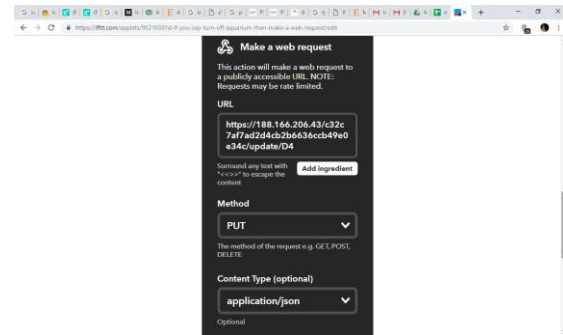
The information stream outline is a piece of the organized examination demonstrating instruments. When utilizing UML, the action graph normally assumes control over the job of the information stream chart. An uncommon type of information stream plan is a site-situated information stream plan. The procedure (work, change) is a piece of a framework that changes contributions to yields. The image of a procedure is a circle, an oval, a square shape or a square shape with adjusted corners (as per the kind of documentation). The procedure is named in single word, a short sentence, or an expression that is obviously to express its substance.

RESULTS

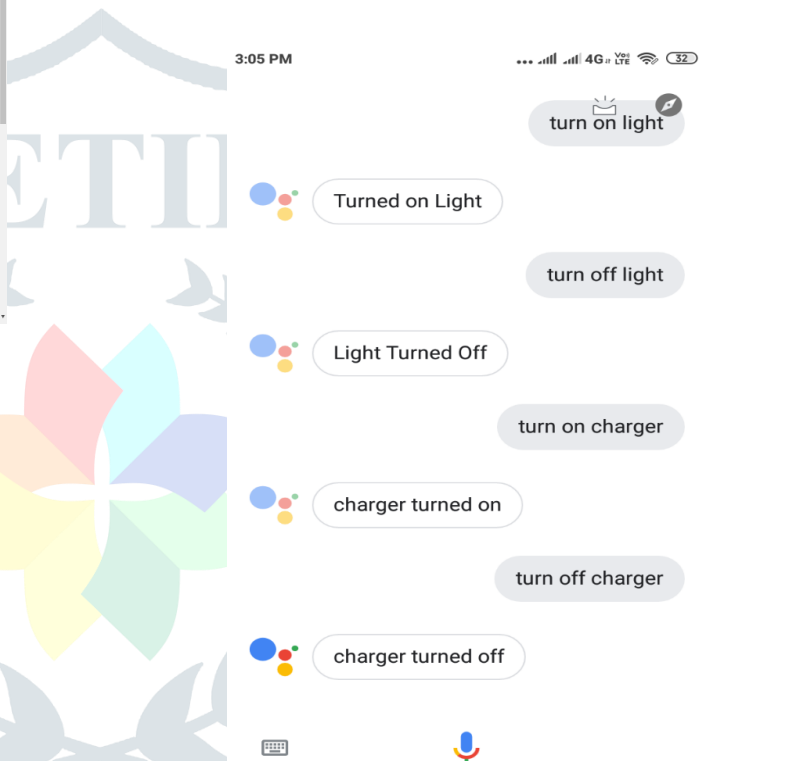
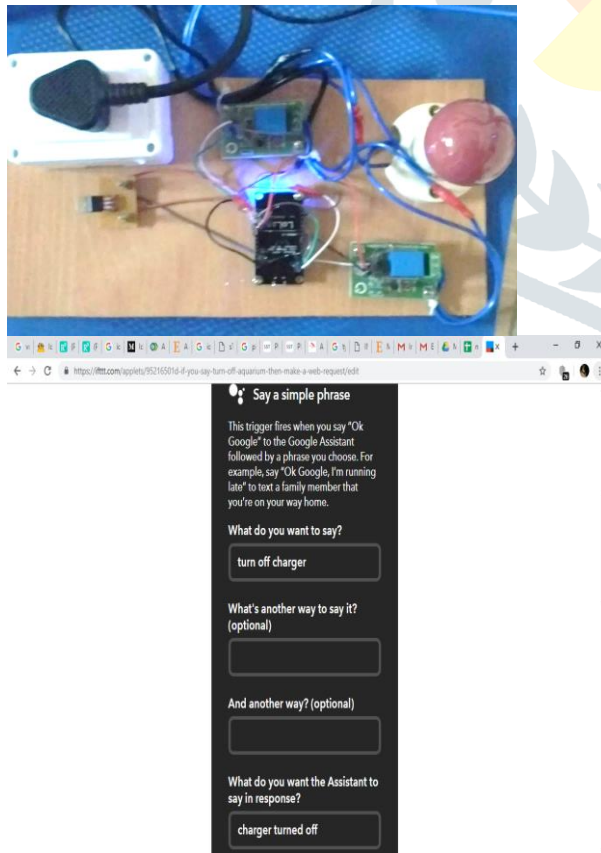
The outcome was sure and the framework reacted well. The graph beneath demonstrates the total model usage of the proposed framework.



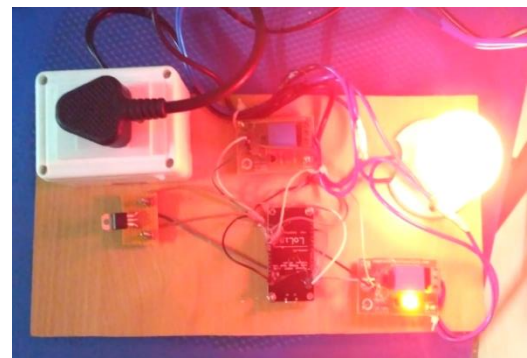
charger, we need to make another applet with various expressions



Screen capture of the IFTTT Application in the wake of creating A few Applets



You can say 'Hello Google' rather than Ok Google. Both will work fine



Light turned ON and then OFF

We can enter any expression according to our application. As should be obvious, the expressions entered in the above fields is for making Turn on charger. For making turn OFF

CONCLUSION

Home appliances controlled by using our google assistance and also maintenance the data logs. The framework is executed utilizing normal family unit apparatuses Natural language voice directions are given to the Google Assistant and with the assistance of IFTTT (If This Then That) application and the Blynk application the directions are decoded and after that sent to the microcontroller. This is achieved by utilizing the open sourced API of Google Assistant by Google Inc.

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