

VOICE CONTROLLED SMART HOME AUTOMATION

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Abstract: As we live a era of smart world, This is world of smartphones and internet using these two major factors, we can control anything from any where, by using these two factors, we implement a project of smart home automation by voice commands with the help of google assistant. Which is very much useful for people who can't walk and for older peoples, they can control smart home devices like lights, switches, fans and other electronic devices with the help of internet by relay. Also we monitors the room temperature and humidity using dht11 sensor. The commands given through Google assistant are decoded and sends the information to the microcontroller turns into control the relay connected to it and stores the data in the cloud and can also access manually by blynk application. For this project we will build an web application called IFTTT which acts as a chain and connects the google assistant and blynk application that controls the home appliances and blynk could to store all the data and can be shown the usage graphically.

Keywords: Internet of Things, Cloud Technology, Automation and Android application.

I. INTRODUCTION:

Home automation refers to the automatic and electronic control of household features, activities, and appliances. The utilities and features of our home can be easily controlled via Internet. There are three main elements of a home automation system: sensors, controllers, and actuators. Having day to day developing technology is a proud moment to the whole world. The foremost aim of the technology is to increase the efficiency and to decrease the effort. In this trending world, Internet of Things is being given extreme importance. In that, Automation, leads to have less effort and much efficiency. By using IoT, we are successful in controlling the appliances in various areas, in which one of them is to control the home automation by using ESP32 Microcontroller.

OBJECTIVE OF THE PROJECT:

The objective of this project is to reduce the work of humans especially for physically challenged people and elderly people. It also saves energy with a proper management of electricity distribution. It utilizes the electricity properly and easily. It can also calculate the temperature and humidity of home surroundings.

II. REVIEW OF LITERATURE

2.1 Bluetooth based home automation system using cell phones:

In this research, a Bluetooth based home automation system the home appliances are connected to the Arduino BT board at input output ports using relay. The program of Arduino BT board is based on high level interactive C language of microcontrollers; the connection is made via Bluetooth. The password protection is provided so only authorized user is allowed to access the appliances. The Bluetooth connection is established between Arduino BT board and phone for wireless communication. In this system the python script is used and it can install on any of the Symbian OS environment, it is portable. One circuit is designed and implemented for receiving the feedback from the phone, which indicate the status of the device.

2.2 GSM based home automation system using cell phones:

The GSM based home automation is lure to research. The SMS based home automation, GPRS based home automation and dual tone multi frequency (DTMF) based home automation, these options we considered mainly for

communication in GSM. In figure shows the logical diagram the work of A. Alheraish, it shows how the home sensors and devices interact with the home network and communicates through GSM and SIM (subscriber identity module). The system use transducer which convert machine function into electrical signals which goes into microcontroller. The sensors of system convert the physical qualities like sound, temperature and humidity into some other quantity like voltage. The microcontroller analysis all signal and convert them into command to understand by GSM module. Select appropriate communication method among SMS, GPRS and DTFC based on the command which received GSM module

III. PROBLEM STATEMENT AND PRELIMINERIES

There may be various technologies in home automation but need of Voice Controlled System is increasing to overcome this difficulty, we developed a system with high accuracy and real time monitoring of physically challenged people and elderly people and helps them to control all the home appliances using a voice controlled home automation system.

3.1 Block Diagram of the Proposed System:

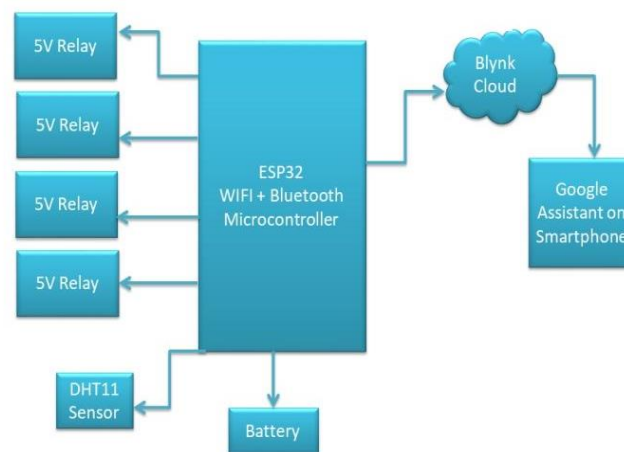


Fig 3.1 Block Diagram of Proposed system

3.2 Flow Diagram of the Proposed system:

The flow diagram represents the proposed system working, it begins with establishing communication and viewing the live streaming from the voice commands and after choosing the mode of operation the contactless sensing and monitoring of the vitals sign from the user is recorded and the recorded data is feed in the cloud storage and the data can be viewed anytime. The process is continuously made for effective working of the system.

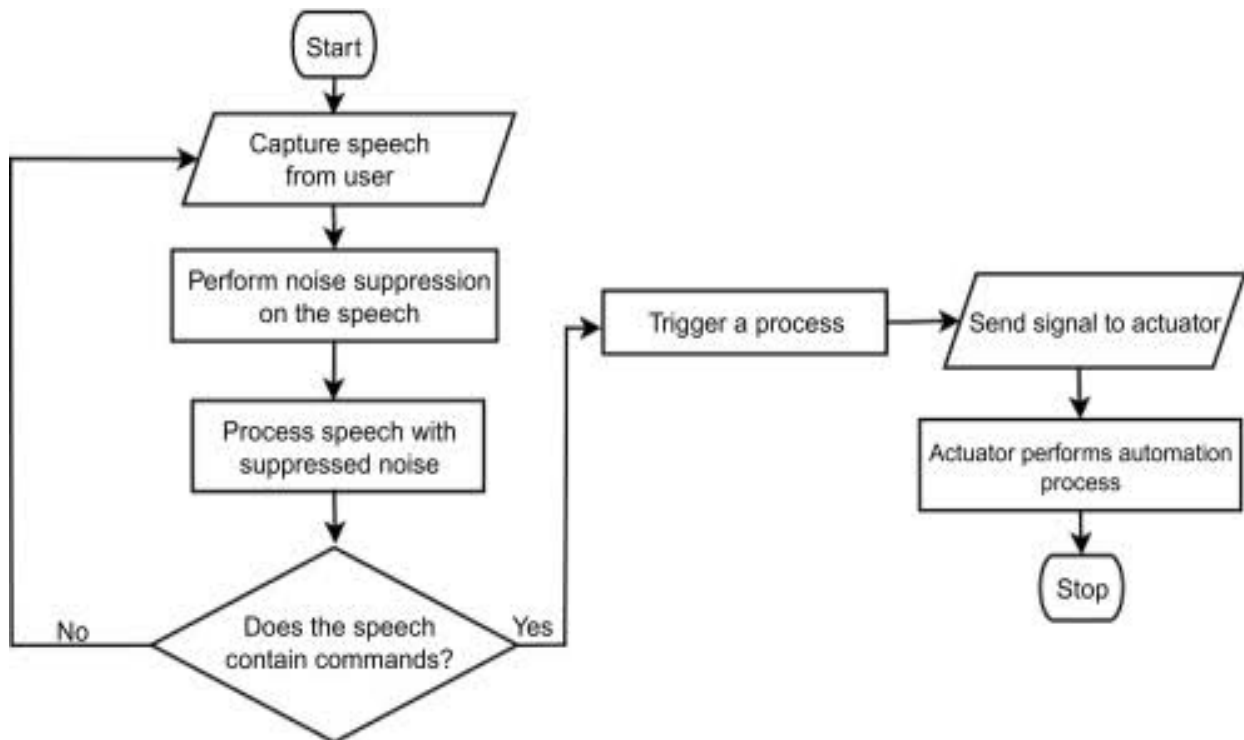


Fig 3.2 Flow Diagram of Proposed System

IV. RESULT OF THE STUDY:

The result of the system of the proposed system and the design is shown below.



Fig 4.1 Voice Controlled Smart Home Design

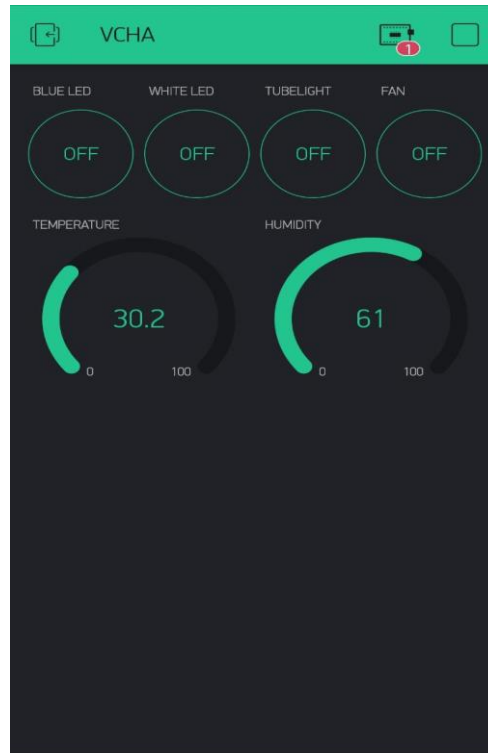


Fig 4.2 Monitoring the home appliances

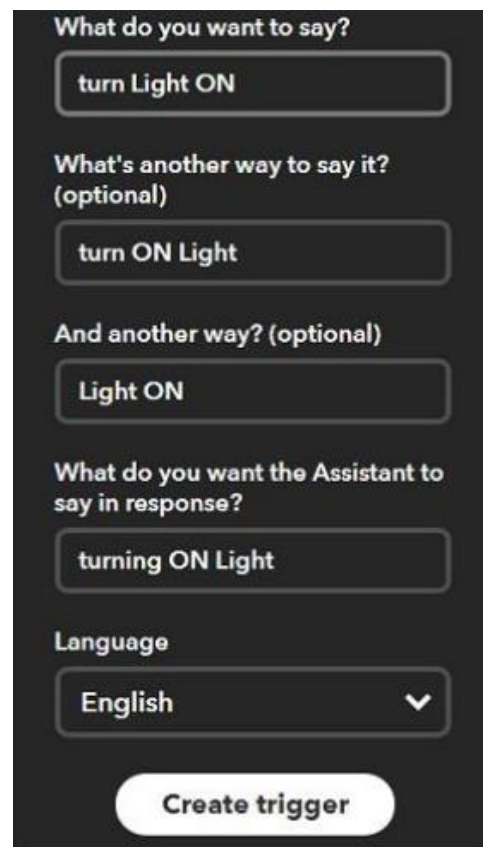


Fig 4.3 Updating details of Voice Commands



V. ADVANTAGES:

The main advantage of the voice commands is to include automation in smart home and also to decrease the difficulty of users through physical contact. It's compact size has made it suitable to manage many places. The system also monitors the temperature and humidity of the house.

VI. CONCLUSION:

The proposed system aims to help the physically challenged people and elderly people to easily have access to the home appliances which they can easily control using a voice automation. This helps the need to access the appliances without physical. As it is a voice controlled system this can be easily used by people who does not know to read and write.

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