

Voice Controlled Home Automation Using ESP8266

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Abstract— Automation the Google main aim of this project was to propose a considerably cost effective voice controlled (Assistant) home controlling generally all kind of home appliances found at home. This will help the users to monitor the condition of various home parameters in the home anytime anywhere. This project aims to implement a voice controlled home automation system using a WI-FI and IOT, which is being remotely controlled and monitored by any Android OS smart phone. The system is implemented using ordinary household appliances. Typical language voice headings are given to the Google Assistant, the microcontroller thusly controls the trades related with it as required, turning the device related with the particular relay on or OFF as shown by the clients mentioning to the Google Assistant. The microcontroller utilized is NodeMCU and the communication between the microcontroller and the application is established via Wi-Fi (Internet). Home automation is a modern technology that helps to enjoy comfortable living conditions inside the home. With home automation, data can be instantly collected and passed between devices and analyzed simultaneously. By connecting the home appliances with the internet, they can be easily accessed from anywhere. In the home automation system, settings are feasible through smart phones or other remote-control devices. This paper gives the design and implementation of a new voice- controlled home automation system that uses Google Assistant for giving user's voice commands as input. It is a low cost and flexible home automation and monitoring system. It enables the user to use a home automation system based on the Internet of Things (IoT). Home appliances like fans and lights can be controlled. The fundamental purpose of this project is to control electronic appliances based on the situational demands of the user.

Keywords: Voice Controlled, Home Automation, ESP8266, IoT

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 Node Microcontroller. We can also use other boards like raspberry pi, beagle bone etc., In the present-day technology, the whole work is done through

communication so the effective way of communication can be done through voice. Even though the technology is developing in our day to day life, there is no help coming into existence for the people who are physically not good on the basis of technology. As the speech enabled, home automation system deploys the use of voice to control the devices. It mainly targets the physically disabled and elderly persons. The home automation will not work if the speech recognition is poor. The speech given by the user will be given as input to the Microphone. Microphone recognizes the speech given by the person and sends it to the recognizing module. It searches for the nearest word even if there are any disturbances in it. If the command (ON/OFF) is given, the action is done. Similarly, the line following robot functions with respect to the speech commands given to it. The line following robot moves forward and backward with the help of sensors and a motor driver board. Home is the place where one desires to be rest after a long tiring day. People come home exhausted after a long hard-working day. Some are way too tired that they find it hard to move once they land on their couch, sofa or bed. So, any small device/technology that would help them switch their lights on or off, or play their favorite music etc. on a go with their voice with the aid of their smart phones would make their home more comfortable. Moreover, it would be better if Any man-made objects that can be assigned an IP address and it has the ability to transfer data successfully over a network, the interaction through a network is called IoT. The internet helps us to bring immediate solutions for many problems and able to connect from any of the remote places. The Internets of Things technology is used to come in with innovative idea and large development space for smart homes to improve the living standards of life. The growth of the Internet of Things will reform a number of sectors, like healthcare, automation energy, transportation, etc. The cloud computing can be used in such case to implement the IoT infrastructure that augmented with sensors and actuators to monitor and control "things" from anywhere.

II. EXISTING SYSTEM

Now a day the advancement in technology various new designed smart makes use of Wi-Fi Home automation for various applications. Mostly wi-fi network was using home security purpose. The various applications are done by Home automation like doing different works on the command ex-switching on the lights when the Home automation is given the command by the Wi-Fi enabled device

III. PROPOSED SYSTEM

The Home automation was controlled by the Wi-Fi network in Blynk android application. The Wi-Fi Home automation can be easily to make on and off by using the command in

Blynk application. We can make the Home automation do the various task using Wi-Fi network technologies.

IV. CONCLUSION

In this project, voice commands are given to the Google assistant. The voice commands for Google assistant have been added through IFTTT website and the Adafruit account is also linked to it. In this home automation, user have given commands to the Google assistant. Home appliances like Bulb, Fan and Motor etc., are controlled according to the given commands. The commands given through the Google assistant are decoded and then sent to the microcontroller and it control the relays. The device connected to the respective relay turned on or OFF as per the users request to the Google Assistant. The microcontroller used is NodeMCU (ESP8266) and the communication between the microcontroller and the application is established via Wi-Fi (Internet). There has been tremendous growth in the home automation sector, and many reputed companies utilizing their opportunity to work with IFTTT to deliver an elegant way to connect families to their homes. Consumers are looking to secure their home environment in today's unpredictable world, and the new Home automation service gives them the peace of mind that they need to protect their family's well-being

V. FUTURE WORK

There are a variety of enhancements that could be made to this system to achieve greater accuracy in sensing and detection.

- 1) There are a lot of other sensors that can be used to increase the security and control of the home like pressure sensor that can be put outside the home to detect that someone will enter the home.
- 2) Changing the way of the automated notifications by using the GSM module to make this system more professional.
- 3) A smart garage that can measure the length of the car and choose which block to put the car into it and it will navigate the car through the garage to make the parking easy for the homeowner in his garage

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