

Home Automation for Physically Challenged Elder People

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Abstract – The Technology has brought everything to happen within the hand. We are using technologies to controlling and monitoring electrical appliances using voice control app with the assistance of internet connection. So it gives a extra space at a home, university and industrial controlling electrical appliances anywhere within the world. By using Internet of Things we are able to control many devices like light,power plug, Fan, computer, security system and etc.It will reduce human effort and power efficiency.

Keywords –

I. INTRODUCTION

The smart home automation system using voice control helps to regulate electrical appliances by using voice commands. The system EsP8266 module for transmitting data for controlling functioning of electrical loads. The module receive sign from any a tool which have voice commanding and with blynk app. compatibility like smartphone. The smart home automation is most beneficial for handicap or aged people. The system solve the matter of switching on/off electrical appliances because when user just need to formulate command to regulate the appliance or electrical loads.

The system is intended in such the way user can control all appliance directly or can control each separately. The system works by interfacing the on/off switches of electrical appliance or loads by using relay or solid state replay, after connecting relays in system the switch works as two way switch. The voice command is shipped by employing a blynk app for controlling the system, a in-built microphone and voice recognition system implemented like AMAZON alexa. A micro-controller (Arduino Uno) is implemented in system, the micro controller receives sign from user device and sent signal to respective relay for turning on/off electrical appliances connected with system like bulbs, fan, cooling unit etc. The system works on 12V DC power which is converted from 220V AC power by using transformer, rectifier for converting AC into DC and capacitive filter making fluctuating DC into pure DC power. This paper target the event of voice controlled based upon speech recognition system. The systems program device may be a smart phone and software which interface with Arduino Uno to execute commands of user.

II. IMPLEMENTATION

Automation plays a key role in human life. Home automation permits North American country to regulate social unit electrical appliances like lightweight, door, fan, AC etc. It conjointly provides home security and emergency system to be activate. the most objective of home automation and security is to assist incapacitated and previous aged people that can alter them to regulate home appliances and alert them in vital things.

This project place forwards the implementation of home automation and security system victimization Arduino micro chip and humanoid smartphone. Home appliances area unit connected to the micro chip and communication is established between the Arduino and humanoid mobile device or pill via Bluetooth module. we'd develop associate authentication to the system for licensed person to access home appliances.

The device with low price and ascendable to less modification to the core is far vital. It presents the planning and implementation of automation system that may monitor and management home appliances via humanoid phone or pill Voice controlled wireless sensible home system has been given for aged and disabled folks. The idea of dominant home appliances victimization human voice is attention-grabbing. The planned system has 2 main parts, they're (a) voice recognition system, and (b) wireless system. this method to regulate home appliances uses a voice controlled humanoid application. By the increasing use of laptop (personal computers), internet, itinerant and wireless technology, it makes it simple for a user to remotely access and management the appliances. The main aim of our system is to make an ideal companion for somebody to be reception. Generally, home automation analysis targeted several wants like

applications that give the push and sensible needs whereas some throw lightweight on the special wants for aged and disabled etc. our system could be a pc primarily based system that may settle for voice to direct commands and method them. The system provides North American country shift any device ON/OFF.

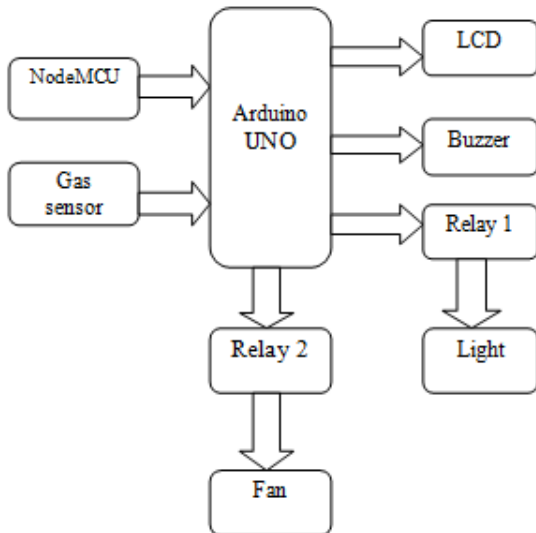


Fig.1 Block Diagram.

1. Node MCU

It permits you to program the ESP8266 WLAN module with the straightforward and powerful LUA programming language. we tend to use it transmit the information to the cloud wherever the information may be hold on and send to the robot app.

2. Gas sensor

A gas sensor is a tool that detects the presence or concentration of gases in the atmosphere. supported the concentration of the gas the sensor produces a corresponding potential by dynamic the resistance of the fabric within the sensor, which may be measured as output voltage.

2. Arduino UNO

Arduino is associate degree open supply hardware and computer code company, project, and user community that styles and manufactures single-board microcontrollers and microcontroller kits for building digital devices and interactive objects that may sense and management objects within the physical world. The project's product square measure distributed as open-source hardware and software, that square measure accredited beneath the GNU Lesser General Public License (LGPL) or the GNU General Public License, allowing the manufacture of Arduino boards and computer code distribution by anyone.

Arduino board styles use a range of microprocessors and controllers. The boards square measure equipped with sets of digital and analog input/output (I/O) pins which will be interfaced to numerous enlargement boards (shields) and

different circuits. The boards feature serial communications interfaces, including Universal Serial Bus (USB) on some models, that are used for loading programs from personal computers. The microcontrollers square measure generally programmed employing a accent of options from the programming languages C and C++ . additionally to mistreatment ancient compiler toolchains, the Arduino project provides an integrated development environment (IDE) supported the Processing language project.

4. BUZZER

A buzzer or electronic device is associate degree audio signalling device, which can be mechanical, mechanical device, or electricity. Typical uses of buzzers and beepers embody alarm devices, timers, and confirmation of user input like a depression or keystroke. It generates consistent single tone sound simply by applying D.C voltage. employing a appropriately designed resonant system, this sort may be used wherever giant sound volumes square measure required. At Future physics we tend to stock several of the foremost common sorts categorised by sort, Sound Level, Frequency, Rated Voltage, Dimension and Packaging sort.

5. Relay

A relay is associate degree mechanical device switch that is activated by an electrical current. one relay board arrangement contains driver circuit, power offer circuit and isolation circuit. A relay is assembled therewith circuit. the driving force circuit contains transistors for shift operations. The junction transistor is use for shift the relay. associate degree isolation circuit prevents reverse voltage from the relay that protects the controller and junction transistor from injury. The input pulse for shift the junction transistor is given from the microcontroller unit. it's used for shift of one device.

6. LCD

LCD (Liquid Crystal Display) screen is associate degree electronic show module and notice a good vary of applications. A 16x2 {lcd|liquid crystal show|LCD|digital display|alphanumeric display} display is incredibly basic module and is incredibly ordinarily employed in varied devices and circuits. These modules square measure most well-liked over seven segments and different multi segment LEDs. the explanations being: LCDs square measure economical; simply programmable; haven't any limitation of displaying special & even custom characters (unlike in seven segments), animations and thus on. A sixteenx2 LCD means it will show 16 characters per line and there square measure two such lines. during this digital display every character is displayed in 5x7 picture element matrix. This digital display has 2 registers, namely, Command and information. The command register stores the command directions given to the digital display. A command is associate degree instruction given to digital display to try and do a predefined task like

initializing it, clearing its screen, setting the indicator position, dominant show etc. the information register stores the information to be displayed on the digital display. the information is that the computer code worth of the character to be displayed on the digital display. Click to be told a lot of concerning internal structure of a LCD.

7. Blynk app

Blynk is a replacement platform that permits you to quickly build interfaces for dominant and observation your hardware comes from your iOS and robot device. once downloading the Blynk app, you'll be able to produce a project dashboard and prepare buttons, sliders, graphs, and different widgets onto the screen.

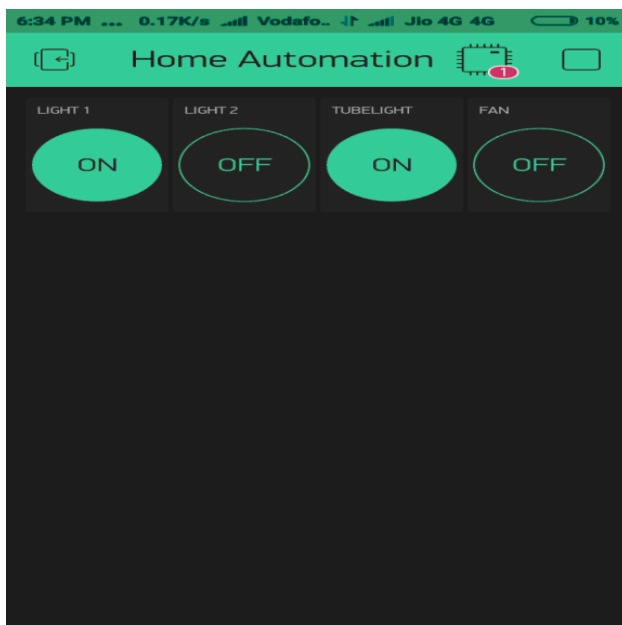


Fig .2 blynk app

III . RESULT

We done home automation for old handicap individuals. Automation relies on voice recognition. mistreatment voice recognition we will management the house appliances like fan etc. The voice is recognized by the google help and also the voice is transmitted through node MCU and also the information signal given to the arduino .the relay can taken the signal and power offer given to relay. From the server we will access the fan lightweight by voice commend (Turn on light) it'll be mechanically ON,again by giving commend the sunshine can shut down. The gas detector find the gas discharged in air conditioning and manufacture buzzer sound . it's helpful to the physically challenged elder individuals .

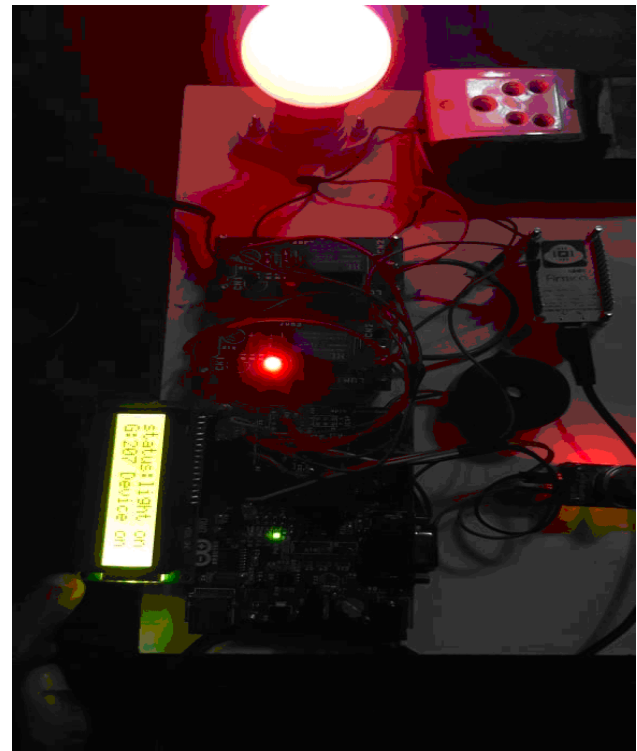


Fig .3 home automation model.

IV. CONCLUSION

The project has projected the concept of sensible homes that may support a great deal of home automation systems. a wise home contains a affiliation between wireless communication, sensors, monitoring. sensible homes square measure a large system that features multiple technologies and applications that may be wont to offer the management of the house appliances simply. During this project, associate degree economical approach for sensible homes was projected and enforced. The Arduino IDE computer code is employed so as to dump the cryptography for the Arduino microcontroller. The load was controlled per the information received. Central management for the complete home has been designed mistreatment 3 microcontroller system styles. These styles were for access management to the house .

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