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ULTRAMODERN TONGUE RESTRAINT SYSTEM FOR ELECTRONIC ACCESSORIES USING IOT TECHNOLOGY

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ABSTRACT

This paper presents the event of home appliances supported voice command through smart phone. This technique has been designed to help and supply the support to aged and disabled people.Bluetooth application has been used as voice recognition and method for the voice input from the sensible phone. In this project, the input is voice which has been given by the android and will be sent to the LPC2148.Bluetooth module is interfaced with LPC2148 micro controller then the received signal will process to control the light, fan and motor. The projected system meant to regulate electrical appliances with comparatively easy interface and simple installation. An application ought to be put in on his/her Android mobile to manage varied home appliances. User will send voice commands exploitation that application. In this project we use a Bluetooth which acts as a transmitter and receiver. This device is integrated to the micro controller. Bluetooth device sends the voice commands to micro controller. Then the various devices which are connected to the micro controller will be turned on or off based on the voice command given. We tend to use IoT technology during this planned system. Updates are shown in websites and additionally sending an SMS through GSM/GPRS.

***Keywords:* Arm7 Board, Bluetooth Module, LCD, GSM/GPRS, Relay**

I. INTRODUCTION

Today world may be a world hub owing to advancements in technology. Inventions and evolution in technology has created this technology. Automation has a very important role in people's life once it involves their commonplace of living because it provides convenient and trouble free surroundings. We tend to need the intelligence of a microcontroller to regulate the devices and residential appliances. There are varied existing technologies obtainable for similar functions however their price and complexness is major disadvantage. During this project, we've designed a reasonable and straightforward to use system that takes the input from the voice recognition module and uses the microcontroller's intelligence to work totally different devices.

Automation may be a technique, method, or system of in operation or dominant a method by electronic devices with reducing human involvement to a minimum. The basic of building associate degree automation system for associate degree workplace or house is increasing day-by-day with various advantages. Man of affairs and researchers are operating to create economical and affordability automatic systems to watch and management totally different machines like lights, fans, AC supported the need. Automation makes not solely associate

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degree economical however conjointly a cheap use of the electricity and water and reduces a lot of the wastage. IoT is used for individuals and things data to be connected Any-time, anyplace, with anyone, ideally victimization any network and any service. Automation is another vital application of IoT technologies.

EXISTING SYSTEM:

In existing system electronic accessories are operated through sensors. Information can be taken from those sensors to operate the apparatus. By using this system we can manually operate the devices and also automatic. If the sensor is detected lights and fans will ON automatically.

PROPOSED SYSTEM:

In proposed system electronic accessories are operated through voice. And also by using IOT technology we can upload the status of every apparatus information in server (Thing speak website). Here we also alert the owner with sending message using GSM/GPRS technology. If the voice is wrong it will alert through buzzer.In this proposed system we can send the voice code through the android application, the security code which is given in source code of a proposed system. Code is send from mobile, and then the code is received to Bluetooth module at micro controller. Micro controller can compare the security code, if code is matched then only apparatus will do work otherwise those are in OFF state. By using IoT technology we can also communicate with server. These apparatus status can be uploaded every time in thing speak web site. So owner can check the status at any time by using GPRS technology. Here GSM can send the status message to the owner, if apparatus will ON. If we can give wrong code to the system, it will alert the buzzer.

II. BLOCK DIAGRAM

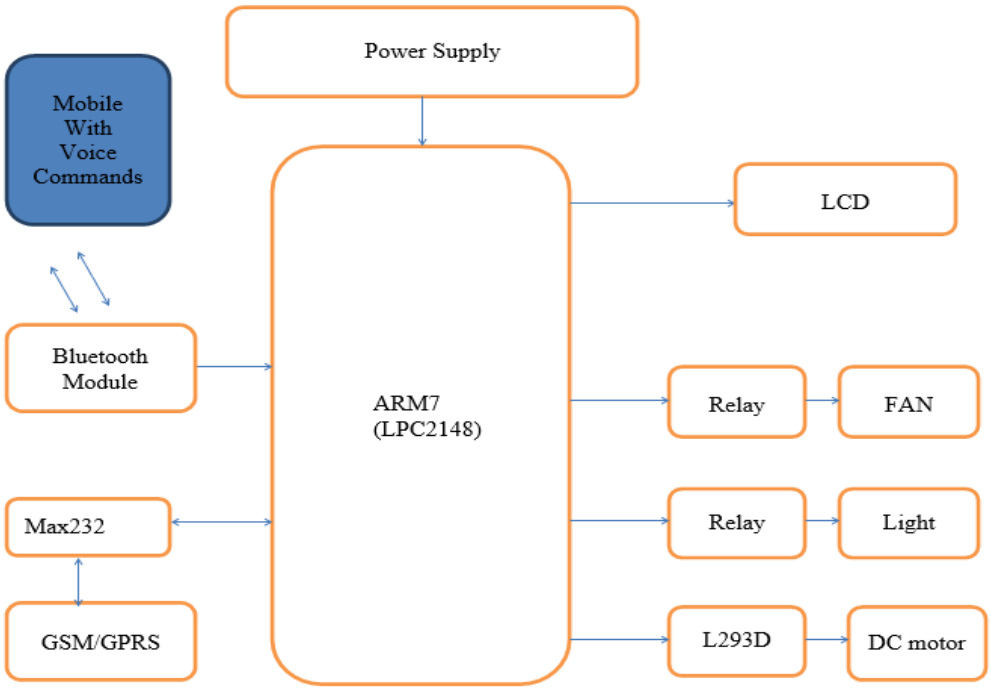

Figure 2.1: Block diagram of proposed system

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III. HARDWARE DESCRIPTION

3.1 LPC2148

The boost sixteen/32-bit ARM7TDMI-S microcontroller coaching board is specifically Designed. The kit is designed in such manner that each one the capability options of the microcontroller. The package supports in device programming (ISP) this is finished thru Serial port boost Board has new and advance alternatives that can provide user the liberty of implementing complicated logic utilized the making plans of embedded structures. The occasion experience on the enhance Board can pose a threat to face out in the field on Embedded structures.

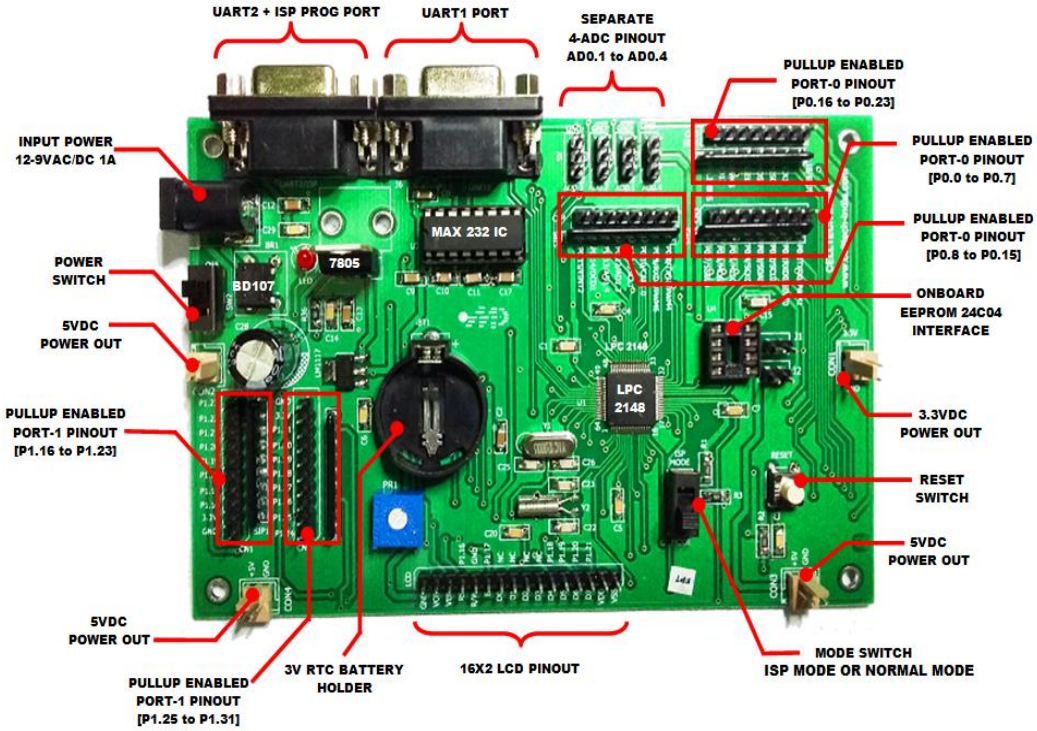

Fig2:-LPC2148 board

3.2 Power supply:

Micro controller needs 5v DC and in homes we got 230v AC supply. By using power supply circuit we need to convert 230v into 5v. For that we have transformers, rectifiers, filters, regulators. Step down transformer for converting 230v AC into 12v AC. Rectifiers can convert AC voltage into DC voltage. So we get 12v DC at end of rectifiers. It is not a pure DC; filters can convert these pulsating DC into pure DC. Regulators can give 5v constant voltage at regulator output. In this way 230v can be converting into 5v using power supply circuit.

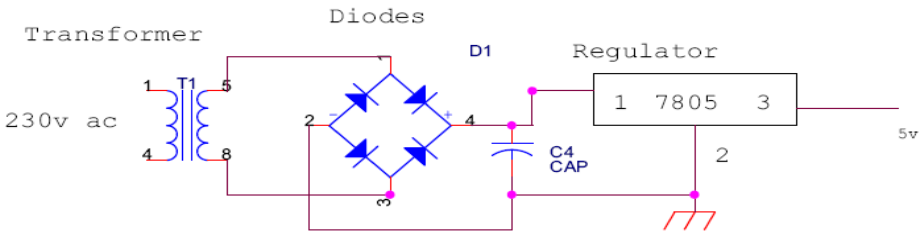

Figure 3.2: Power Supply

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3.3 Relay:

Relay is a current amplification device. Micro controller will give only 50uamp current to the output. This current is not sufficient for an output device. By using relays we can increase the current from 50uamp to 1Amp. These will be possible with EMF, which will be generated through coils in relay.

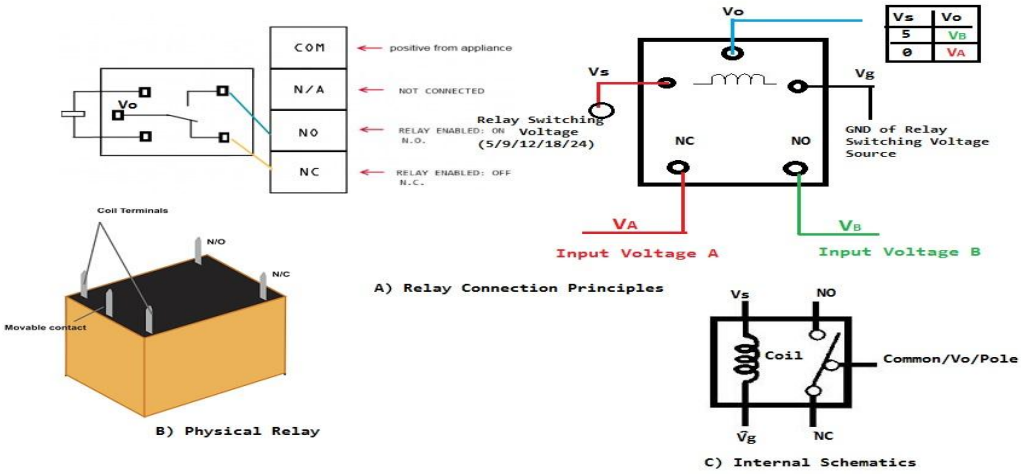

Figure 3.3: Relay

3.4 L293D:

L293D is the motor driver and l293d issupport currents 1A at voltage from 4.5vto 36v. Between coil1 and coil2 one copper wire can produce Electromagnetic force by using this force it can produce 1Amp current. It hasfour input and output pins for micro controller and motor.

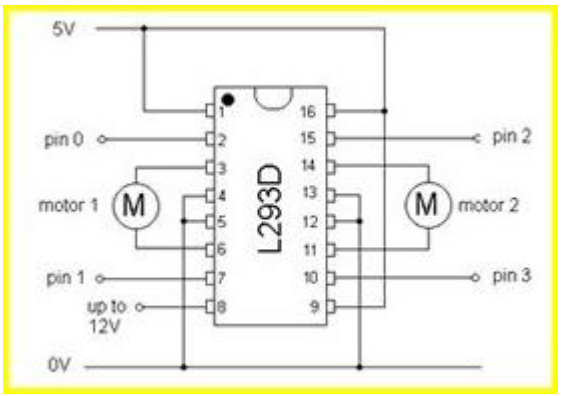

Figure 3.4: L293D motor Driver

3.6DC MOTORS

Motors are electro mechanical gadgets which can be used for to convert the electrical signals into mechanical indicators. The all D.C motors are having equal internal mechanism, both electromechanically to change the route of current-day flow in a part of the motor. In challenge send for to move the motor in precise course. We want to attach the motor to controller through driving pressure IC only.

Figure 3.6: DC motor

3.7 BLUETOOTH:

Bluetooth could be a wireless protocol utilizing short-range engineering facilitating signal transmission over short distances from mounted or mobile devices, making wireless personal house networks (PANs). The intent behind the event of Bluetooth one of the creation of digital wireless protocol, capable for different multiple connecting devices and overcoming problems arising from synchronization of those devices. Bluetooth uses an awfully study radio technology mentioned as frequency hopping unfold spectrum.

Figure 3.7: Bluetooth module

3.8 GSM

GSM is associate degree open, digital cellular technology is for sending mobile voice and knowledge services. GSM may be a digital mobile communication system that's wide utilized in Europe and alternative elements of the globe. GSM uses variation of your time Division Multiple Access (TDMA) and is that the most generally used of the 3 digital wireless phone hone technologies (TDMA, GSM, & CDMA). GSM digitizes and compresses knowledge, then sends it down the channel with 2 alternative streams of user knowledge, every in its own time interval. It operates at either the 900 megacycle per second or one, 800 megacycles per second waveband. It supports voice calls and knowledge transfer speeds of up tonine.6 Kbit/s, beside the transmission of SMS.

Figure 3.8: GSM module

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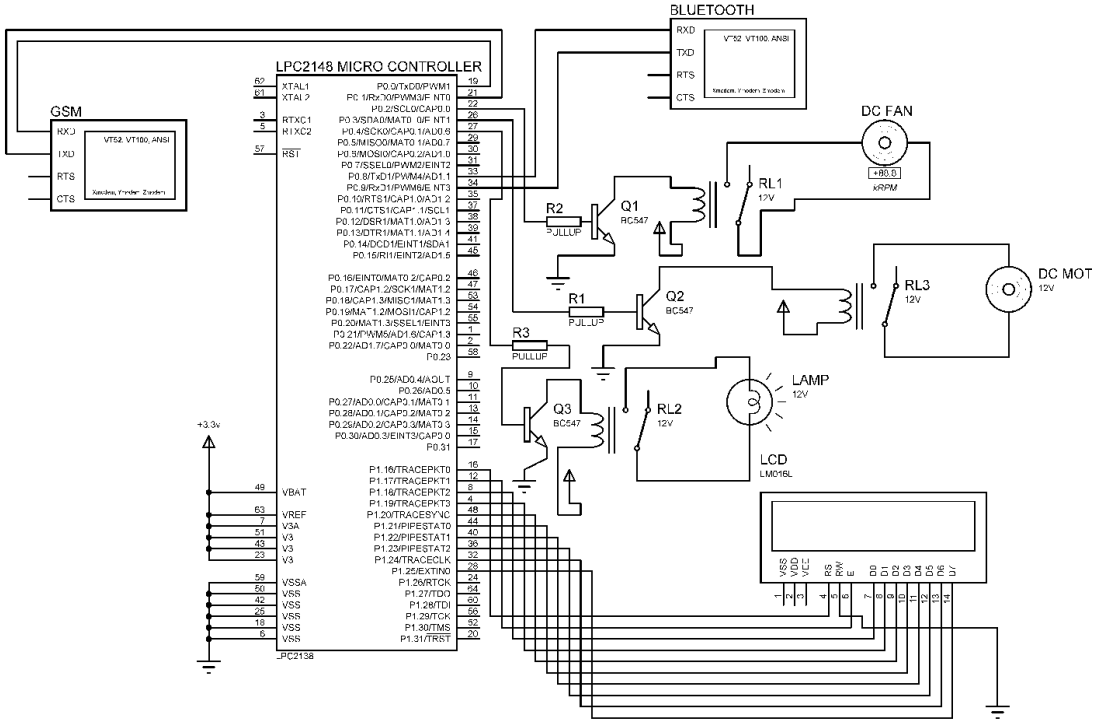
IV. SOFTWARE DESCRIPTION

The Keil4 Vision is associate degree IDE for Embedded c language. During this IDE, import the utilities and libraries per the controller we are the use of. The IDE is incredibly more easily and user friendly thanks to apply. It consists of all the C/C++ compilers, assemblers, and debuggers in it. It simplifies the way of embedded simulation and making an attempt call at conjunction with Hex file technology.

UC flash code is employed for selling a hex file of project into hardware. During this code foremost we are able to browse a hex file and these hex file is hold on in small controller's store.

V. SCHEMATIC AND WORKING

5.1 Schematic diagram description:



5.2 Working Procedure of Proposed System

We use ARM 7 LPC2148 Microcontroller which consumes very low power which can operate with only 3.3 v DC and high number of GPIO Pins. Our project specifies the "ULTRAMODERN TONGUE RESTRAINT SYSTEM FOR ELECTRONIC ACCESSORIES USING IOT TECHNOLOGY". In proposed system electronic accessories are operated through voice. And also by using IOT technology we can upload the status of every apparatus information in server (Thing speak website). Here we also alert the owner with sending message using GSM/GPRS technology. If the voice is wrong it will alert through buzzer. Micro controller can compare the security code, if code is matched then only apparatus will do work otherwise those are in OFF state. By using IoT technology we can also communicate with server. These apparatus status can be uploaded every time in thing speak web site. So owner can check the status at any time by using GPRS technology. Here GSM can send the status message to the owner, if apparatus will ON. If we can give wrong code to the system, it will sound the horn.

On which we are making to control devices automatically. The modules are connected to the microcontroller through serial ports. The Bluetooth module is connected to the serial port2 i.e. UART1 and GSM module to the

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serial port 2 i.e. UART1. The devices get operated by Bluetooth and the signals are sent to the microcontroller. The microcontroller receives the signal and does the processing to the required device.

VI. APPLICATIONS AND ADVANTAGES

6.1 Applications:

- In homes.
- In banks for security purpose.
- In military locker systems

6.2 Advantages:

- For physically handicapped persons and elder people, for easy to operate apparatus.
- If we implemented this technology in locker, we can easily find the thieves through message alert.

VII. CONCLUSION AND FUTURE SCOPE

7.1 Conclusion

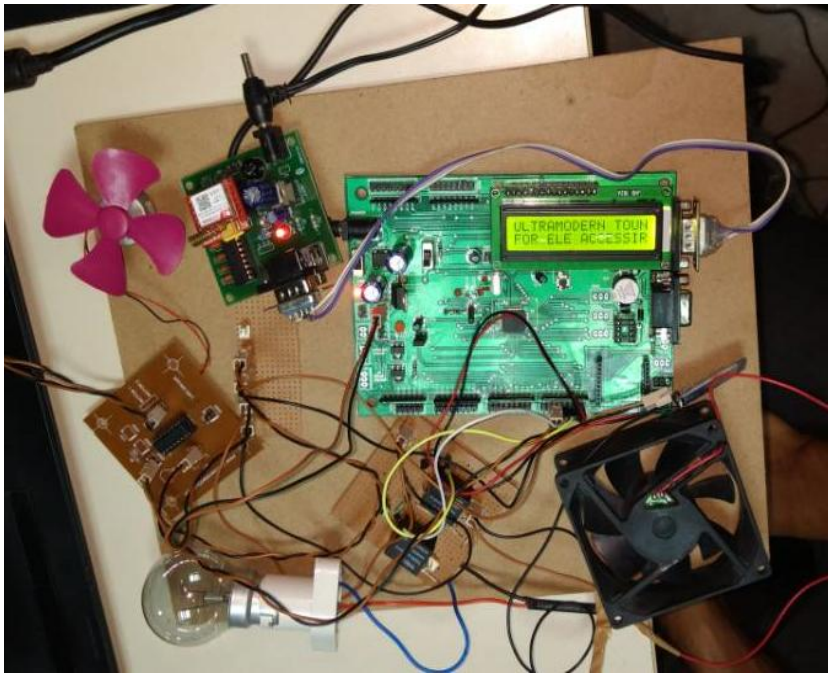
Proposed system isconcludingthat the devices can be operated through voice of human beings through a Bluetooth device and a microcontroller. Bluetooth communication can receive and send the voice data for electronic appliances and this information can be uploading in website and also massage alert will be sent to owner.

7.2 Future Scope

In future we can develop this project with longer distance. For easy to operate and know the status of electronic accessories.

VIII. RESULTS

The result obtained in providing the security is quite reliable in iot based. The system has successfully overcome some of the aspects existing with the present technologies, by the use of iot as the authentication Technology.



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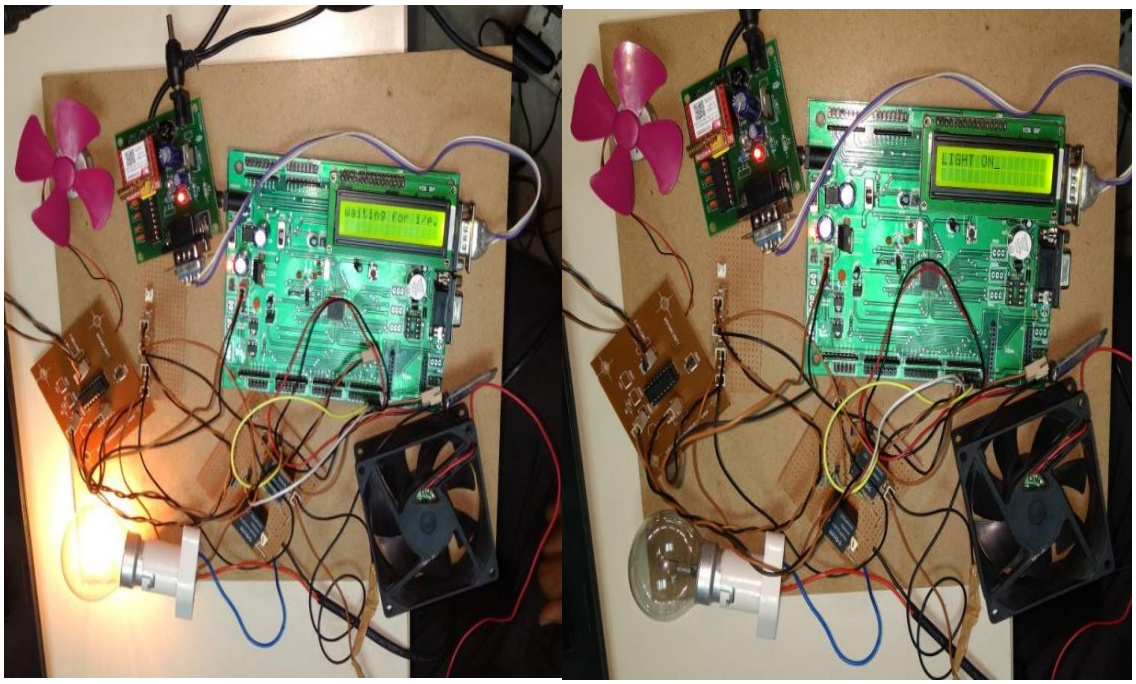

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