

Voice Activated Wireless Controlled Home Automation System Using Bluetooth Technology

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Abstract:

Computerization is a trending subject in the 21st century making it play a significant role in our daily lives. The primary fascination of any robotized framework is lessening human work, exertion, time and mistakes because of human carelessness. With the improvement of current innovation, advanced mobile phones have turned into a need for each individual on this planet. Applications are being produced on Android frameworks that are valuable to us in different ways. Another up and coming innovation is common dialect preparing which empowers us to summon and control things with our voice. Joining these, our paper displays a miniaturized scale controller based voice controlled home robotization framework utilizing advanced cells. Such a framework will empower clients to have control over each machine in his/her home with their voice. All that the client needs is an Android Smartphone, which is available in nearly everyone's hand these days, and a control circuit.

Keywords — Arduino Uno, HC-05 Bluetooth Module, Home Automation, Smartphone, Voice Control.

I. INTRODUCTION

The premier point of innovation has been to build productivity and abatement exertion. With the appearance of 'Web of Things' in the most recent decade, we have been pushing for ubiquitous figuring in all circles of life. It in this manner is of extraordinary significance to improve human interfacing with innovation. Robotization is one such zone that points that accomplishes effortlessness while expanding proficiency. Voice controlled House Automation System intends to assist the reason for computerization in order to accomplish the objective of straightforwardness. The crude man understood that a successful method to speak with each other is through voice. With least exertion, thoughts could be described no sweat. At the point when the principal PCs came around, accomplishing the level of refinement in order to describe summons utilizing voice to a machine was just acknowledged in sci-fi. However with enormous achievements in the field, we are at the slope of really utilizing voice to interface with gadgets. Utilizing this viable yet imbued type of correspondence we would refine innovation as it were. Voice controlled House Automation System sends the utilization of voice to control gadgets. The upsides of utilizing voice as an interfacing medium are multifold. Initially we would get rid of or essentially diminish the need of preparing for working

would enable individuals with shifted inabilities to get to a similar innovation. We have sent an Android Application as client front end principally as a result of the simplicity at which the stage gives us intends to utilize complex innovation and because of the far reaching reception in the portable industry. Android is being utilized as the working framework for more than 80% of the smart phones. Voice controlled House Automation System use the power of Arduino to give an all encompassing voice controlled robotization framework. Utilizing Common Language Processing and the accessible equipment in most cell phones, it makes an interpretation of voice to be utilized for controlling electrical gadgets.

II. LITERATURE SURVEY

This system is modified with two methods; first one is by voice and next is by without voice. With the help of voice recognition module, we automate our home appliances by voice that recorded in it. Module can be arranged by sending charges with serial port by means of amplifier to PC and put away in module. This put away voice isn't erasable after

power off. Keypad is straightforward and all the more simple strategy to make activity with framework as a result of to supplant issue will happen by voice acknowledgment module. Voice recognition module is well developed and advanced so no problem is created by this module but by the way if it not works then we can be use another method like non voice strategy (keypad). Correspondence is the fundamental point of the framework. We utilized RF transmitter and recipient with ISM band of UHF 314-434MHz. It has high affectability, wide working voltage and low power utilization. Transmitter has ASK adjustment qualities inside. Home mechanization was first brought into the world market in the 1970s, yet it neglected to meet the desires of individuals and was unsuccessful. There were different reasons related with the disappointment of the home robotization framework. The framework was neither easy to use nor cost productive. Presently, the principal point to be remembered when planning a home robotization framework is that it ought to be fetched effective and simple to introduce. K. Y. Lee and J. W. Choi [1], in their research on the Housing Learning and Improvement Network in 2003, defined a Smart Home as a “unit where all the appliances of the house are connected together and controlled and monitored remotely.” The following paragraphs will give a summary of the previous research works in the field of Smart Homes. T. Tamura et. al. [2], in their research, constructed the welfare techno houses in Japan in 2003. The motive behind the project was to monitor the health of the disabled and older people living in the home, thereby improving their quality of life. D. J. Cook et. al. [3] successfully conducted the MavHome project at the University of Texas, Arlington. The project used sensors to detect the state of the environment, and with the help of controllers, took the necessary action to maintain equilibrium. These sensors form an ad-hoc network to make the decisions.

III. PROPOSED WORK

- STATEMENT OF PROBLEM

1. Bluetooth module is unable to connect.
2. After Bluetooth connected arduino devices is not working properly/unable to read the value from arduino app.
3. Relay is not working.

- OBJECTIVES

1.A) The burd rate of Bluetooth can be change according to the mobile device. So we have to choose proper burd rateforthe specific smart phone/device. For ex. 96000,84300, etc.

1.B) We are using specific HC05 which can be usable as master as well as slave device. So first we have to declare or/ teach the Bluetooth module according our problem.

2) The IDE (integrated development environment) which we are using to burn the ATMEGA IC (Integrated Circuit) which can read only numeric value and perform the calculation on it. Because the of the ATMEGA chipis microcontroller and thus it has some limitation. Thatswhy we convert the string value intonumeric valueusing the android application.

3)Realy module which is operated on 5 volt. Have the different option to turn it on or off. So,someof the release are operate on high value from arduino board and some operates on low value of arduino board. So, first we have to identify that which type of relay we are using.

IV. SYSTEM ARCHITECTURE

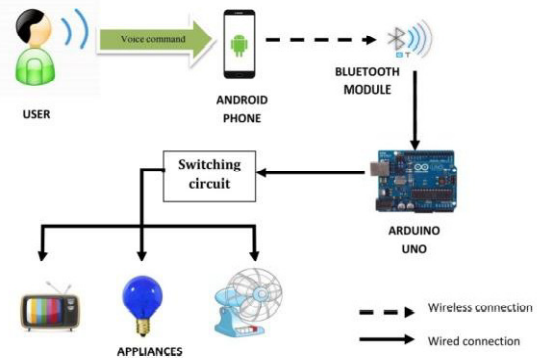
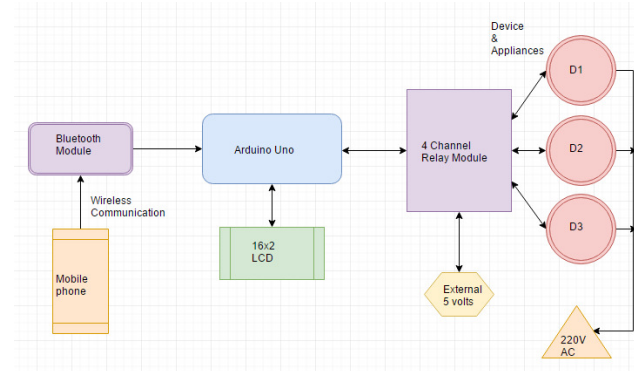


Figure 1: Block Diagram of the System

V. DATA FLOW DIAGRAM



VI. MODULES

The Voice-worked Android and Arduino Home robotization framework utilizes an Android based Bluetooth empowered telephone for its application and the Arduino Uno as the microcontroller. The key parts of this framework are:

- Android based telephone

- Bluetooth module
- Arduino Uno
- Relay sheets
- Reverse built switch

Android Based Phone

Android is a versatile working framework (OS) in view of the Linux bit and as of now created by Google. With a UI in view of direct control, the OS utilizes touch inputs that freely relate to genuine activities, such as swiping, tapping, squeezing, and switch squeezing to control on-screen objects, and a virtual reassurance.

Bluetooth Module

Bluetooth is an unavailable development standard for exchanging data over short sections (using short-wavelength UHF radio waves in the ISM band from 2.4 to 2.485 GHz) from made and phones, and building specific zone structures (PANs) . The Bluetooth module being used empowers us to put out and get signals. It gets the stuff from the Android phone and transmits it to the serial port of the Arduino Uno.

Arduino Uno

The Arduino Uno is a microcontroller board in light of the ATmega328p. It has 14 pushed data/yield pins (of which 6 can be used as PWM yields), 6 major wellsprings of information, a 16 MHz mud resonator, a USB association, a power jack, an ICSP header, and a reset get. It contains everything anticipated that would help the microcontroller. We either need to interface it to a PC using a USB affiliation or power it with an AC-to-DC connector. The Arduino circuit goes about as an interface between the thing part and the mechanical assembly some portion of the endeavor .

Relay

A transfer is an electromagnetic switch. As such it is initiated when a current is connected to it. Ordinarily a transfer is utilized as a part of a circuit as a sort of switch (as demonstrated as follows). There are diverse kinds of transfers and they work at various voltages. At the point when a circuit is manufactured the voltage that will trigger it must be considered. In this task the hand-off circuit is utilized to turn the apparatuses on/off. The high/low flag is provided from the Arduino Uno microcontroller.

Reverse Engineered switch

It is inverse to the typical wallmounted switch. At the point when the typical switch physically on it proceeds with the power move through it. Yet, the figured out switch does the contrary errand of typical switch. which is the point at which we supply the current through the figured out switch it naturally turned on or off with no manual power.

VII. CONCLUSION

The implementation of this project overall is successful. The motive of making the project cost efficient and user friendly is taken into account and achieved. The project is comprised of components such as a Bluetooth module, an Arduino board, an Android mobile device, opt couplers, and an Android application (LMBT). Furthermore, with the discussions and objectives presented, it can be concluded that the objectives of the project have been achieved. Taking into consideration the target audience of elderly and handicapped people, the project developed is user friendly. Using an Android mobile phone, a Smart Home is created and controlled with a smart phone. As of late, the home robotization showcase is extremely encouraging field that is becoming quick and necessities huge scope of improvements that can be done in the idea of brilliant home. For Home Automation there are numerous advancements accessible in advertise like zigbee, x-10, Insteon, Enocean, z-wave and so forth. The framework comprises of GSM innovation and microcontroller which diminishes the cost of framework and there are particular example of order which gives security against unapproved client.

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