Home Automation with Voice and Mobile Application

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Contents

Introduction

- There is an increasing demand for **Smart Homes,** where appliances can be easily controlled through one common device.
- This project presents a possible solution whereby the user controls devices by using their existing mobile phone, where control is communicated to the Microcontroller from a mobile phone through its Bluetooth interface.

Hardware Used

- Android Mobile
- Arduino Nano
- Bluetooth Module (HC-05)
- Relay Module
- Jumper Wire
- Switch Board with (220v) AC Power Supply
- Electricity Wire Cable
- Home Appliances (Example: Fan, Bulb, Led, Socket)

Software Used

- **Arduino IDE :**

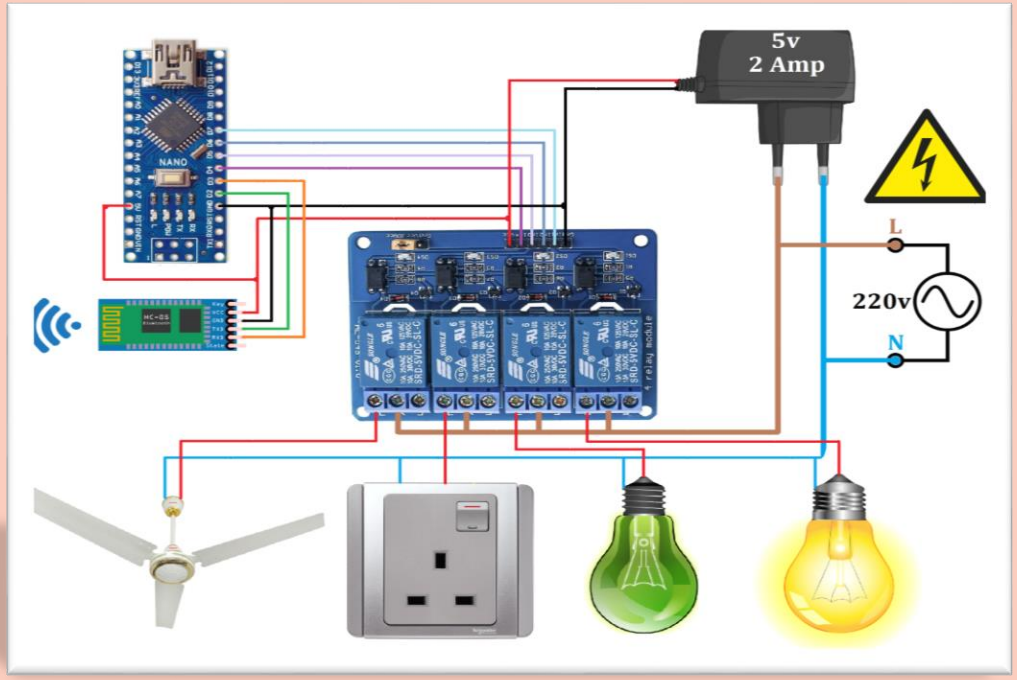
  It is an Open Source ide which is used to create a file that is uploaded to the Arduino. Also it is Platform independent.

- **MIT App Inventor :**

  MIT App Inventor is a web application integrated development environment originally provided by Google, and now maintained by the Massachusetts Institute of Technology (MIT).

  It lets you develop applications for Android phones.

Circuit Diagram



Screenshot of Mobile Application

Working

- Connect Bluetooth module with the Android phone's inbuilt Bluetooth.
- Install and open the application on Android phone.
- Tap on the button or give voice command to switch device On/Off.
- Voice and button command converted to text form by the application.
- Generated text transmitted to Arduino module via Bluetooth module.
- Matching text with Arduino code.
- If text matches, it sends a signal to the Relay module to operate the power supply for the appliances.
- If text not matches, try again by tapping the button or give voice command to switch device On/Off.

Advantages

- It is a robust and easy to use system.
- It will save your energy and money.
- It provides security.
- There is no need for extra training of that person who is using it.
- It can be use by physically challenged people.
- All the control would be in your hands by using this home automation system.
- This project can provide the facility of monitoring all the appliances with in the communication range through Bluetooth.

DISADVANTAGES

- Bluetooth is only works for a limited range up to 10 meters so the control cannot be achieved from outside this range.
- Number of appliances which can be controlled through this circuit are limited.
- Circuit complexity increases as number of devices increase.
- When the new users want to connect, first download application software and then configuration must be done.

FUTURE WORK

- Can be changes to an IOT device using Wi-Fi module.
- So it can be controlled from anywhere around the world.
- In future Home automation may have very high potential.

REFERENCES

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Any Questions...???


THANKS !