

## Voice Control Smart Home Automation.

### About This Project:

The concept of Home Automation is gaining popularity as it helps in reducing human effort and errors and thus increasing the efficiency. With the help of Home Automation system, we can control different appliances like lights, fans, TV, AC etc. Additionally, a home automation system can also provide other features like security, alarms, emergency systems etc. can be integrated.

There are many types of Home Automation Systems like Bluetooth Controlled, Internet Controlled, RF Controlled, Remote Controlled (IR Remote) etc. Each type has its own advantages and disadvantages. In this project, we have designed a Voice Activated Home Automation system, where different appliances are controlled by sending a Voice Command.

The Voice Activated Home Automation project is implemented using Arduino Nano, Bluetooth and a smart phone.

The project Voice controlled home automation project helps to control the electrical loads based on Bluetooth input signal. The Bluetooth device receives this input signal from android device. This system is especially beneficial in case of handicapped or aged people who find it difficult to walk and operate the electrical switches to turn on or off the loads. This system solves this issue as now the user just has to give voice commands to turn on or off the loads. Here 4 loads are used to demonstrate light, fan, heater and AC. All these loads can be individually turned ON/OFF or all loads at the same time. This system solves the issue by interfacing a unit with home appliances that switches these loads based on the input received from android device. The Bluetooth receiver is interfaced with Arduino in order to accept the commands and then react accordingly. It operates the loads through a set of relays are used between loads and the control unit.

This system thus can be used in many domestic applications and in industrial setups. The power supply setup of the system contains a step-down transformer of 230/12V, used to step down the voltage to 12VAC. To convert it to DC, a bridge rectifier is used. Capacitive filter is used which makes use of 7805 voltage regulator to regulate it to +5V that will be needed for microcontroller and other components operation, in order to remove ripples.

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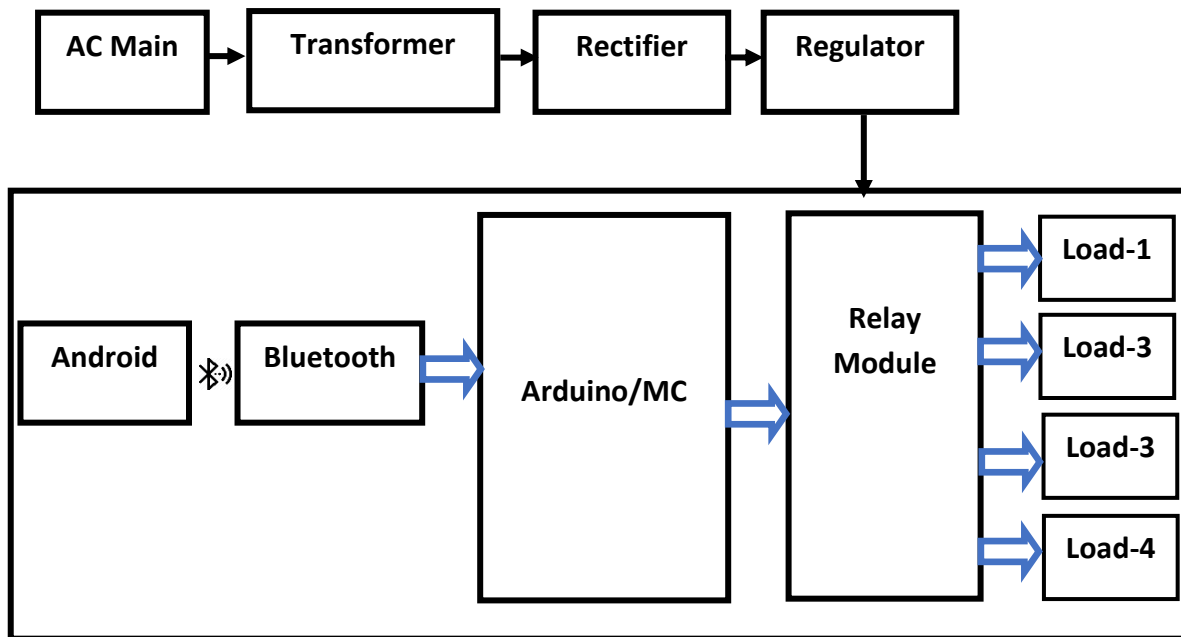
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**Block Diagram:**



**Figure: Block Diagram of Voice Control Smart Home Automation.**

**Required Instrument:**

- Arduino Nano.
- Bluetooth Module.
- Relay.
- Transistor.
- Transformer.
- Diode.
- Bridge Rectifier IC.
- Voltage Regulator IC.
- Capacitor.
- Resistor.
- Android/Apps.

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**Advantages & Feature:**

- Voice Control System.
- Useful in-Home Environment
- Suitably Used.
- Cost-Effective Home Automation
- Remotely Control (Up to 100 Meters)
- Used Bluetooth Technology.
- Can Be Operate Very Fast.
- Totally Wireless Technology.
- High Security.

**Applications:**

- Can Be Used at Home.
- Can Be Used at The Office.
- Factories, Educational Institutions, Hospitals Can Be Used.



**N.B:** For This Project Details & Customized Development or to Get Any Engineering Project Solutions Contact with Us.

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