

Arduino based Home Automation

ABSTRACT

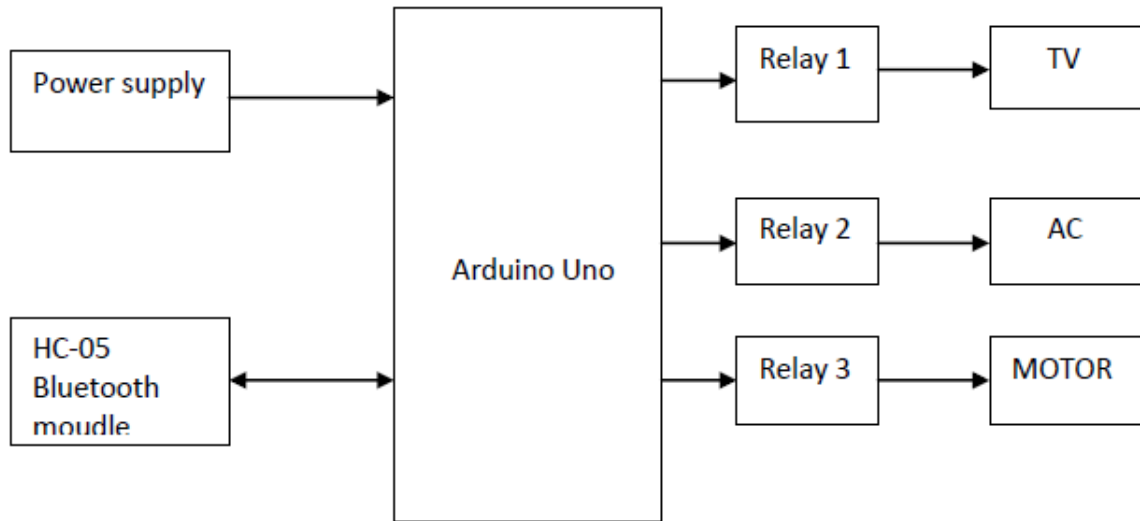
The main aim of the project is to control the home applications remotely using Android OS smart phones with an Arduino board. This is an advanced technology in the home automation, so houses are getting smarter.

Usually conventional wall switches are located in different parts of the house and often require persons for their operations and, thus, manual pressing turn them on and off. It becomes very difficult for the elderly or physically handicapped people to operate them. This system is enhanced to control the home applications through an Android application of smart/ tablet phones by entering the selected number for corresponding load.

The proposed system uses an Arduino board and a rectified power supply. A Bluetooth is interfaced to the Arduino board using Rx and Tx pins for communication. The electrical loads are controlled by the TRIAC device which is connected to the Arduino board through opto-isolator. Opto-coupler is connected to trigger the back-to-back SCRs (TRIACS) with isolation from the controlling section.

If an owner connects his/her Android application device to an Arduino system through Bluetooth then he/she can send the control signals through the Bluetooth attached to the Arduino system. He/she can enter the selected option in the Android application on the GUI for corresponding loads and that data is sent to the Arduino system. The received data is compared with the stored data in the Arduino and, if it matches, then the microcontroller will perform the desired operation.

BLOCK DIAGRAM:



HARDWARE REQUIREMENTS:

Arduino board, Bluetooth module, Relays, Voltage Regulator, Lamps

SOFTWARE REQUIREMENTS:

Arduino software

Languages: Arduino Programming language