MPCA Project

Project title: **Arduino based Home Automation using Bluetooth**

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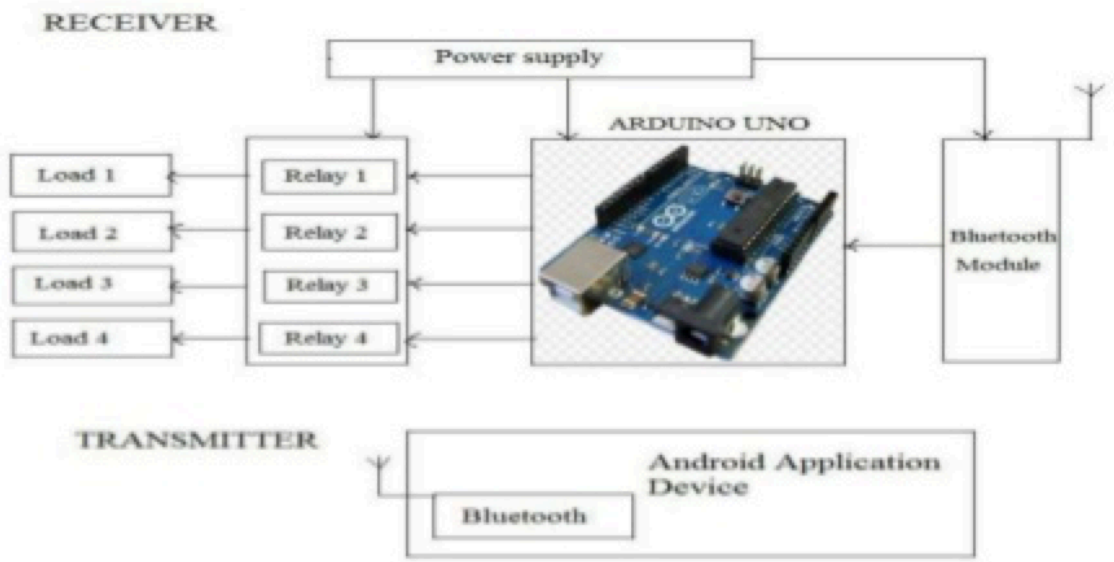
1. AIM: The aim of this project is to control different home appliances(to turn on or off appliances remotely) using a smartphone(using bluetooth).

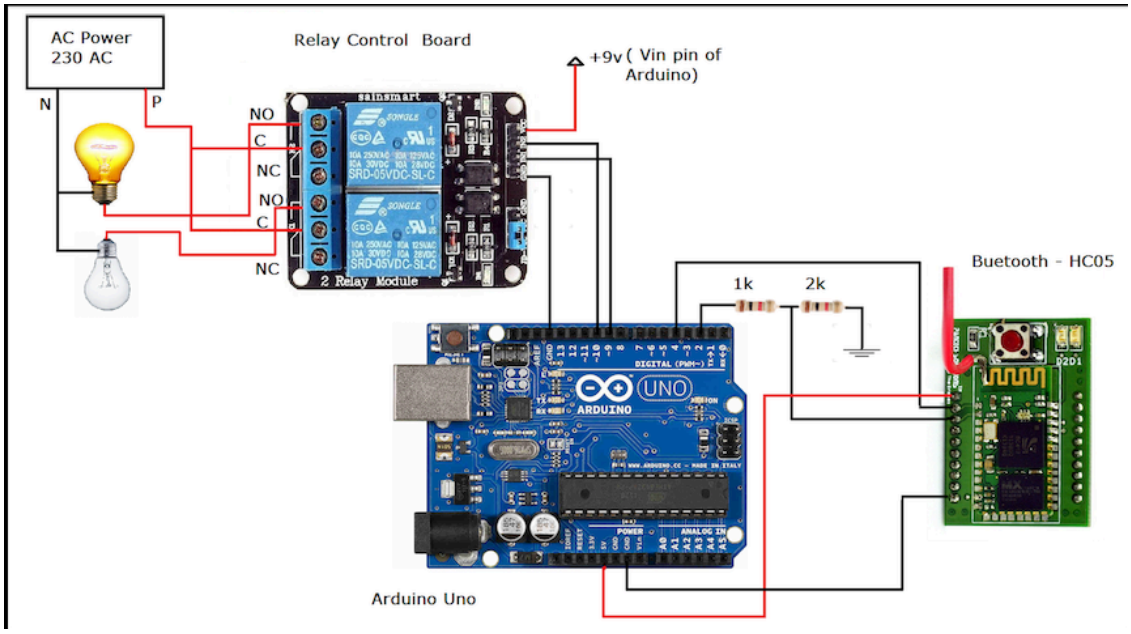
2. SCOPE: Nowadays, people have smartphones with them all the time. So it makes sense to use these to control home appliances. Presented here is a home automation system using a simple Android app, which you can use to control electrical appliances with clicks. Commands are sent via Bluetooth(HC05) to Arduino Uno, Which controls the relay operation(ON or OFF). So you need not get up to switch on or switch off the device while watching a movie or doing some work.

3. DESCRIPTION OF THE PROJECT: In this project, we will design a simple home automation project using simple components using which different electrical appliances can switched on or off. The project is based on Arduino and we have used Arduino UNO for the project.When the power is turned on, the connection LED on the Bluetooth module starts blinking. We need to start the “Bluetooth Controller” app in our smartphone and get connected to the Bluetooth module. If the pairing is successful, the LED becomes stable.Now, in the app, we need to set different keys for different loads and their corresponding value that must be transmitted when that key is pressed. Then we are ready to control the loads. When a key is pressed in the smartphone, the Bluetooth module receives the corresponding data and intern transmits that data to Arduino.For example, if we press “LOAD 2 ON”, then the data received by the Bluetooth module is “2”.This data i.e. “2” is transmitted to Arduino. Arduino then compares the received data with the data written in the sketch and accordingly turns on the load 2. The similar action can be applicable to other keys and loads.Using this type of connection, we can control i.e. turn on or off different home electrical appliances using our smartphones.

4. BLOCK DIAGRAM:



5. CIRCUIT DIAGRAM:



6. HARDWARE REQUIREMENTS:

- Arduino Uno
- Bluetooth – HC05
- Relay Board
- Tungsten Bulb(2)
- Connecting Wires
- AC power supply(230v)

7. EXPECTED RESULT/OUTPUT:

Once the setup is done, we are ready to transmit the data to arduino. When Light1-ON is press, light1 will glow and if Light1- OFF is pressed Light1 will Off. Same to Light2. If we need to turn OFF all lights we need to press All Loads OFF.