Internet Of Things

BATCH - No -B6

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Aim:

To control appliance Using a Android App

Objective:

To control (on/of) the appliance using app instead of switches. and can be used for old devices also.

Abstract:

The home automation circuit is built around an Arduino Uno board, Bluetooth module and a relay board. The number of channels depends on the number of appliances you wish to control.

The main components used in our project are:

1. Arduino Uno board
2. Bluetooth module HC-05
3. relay board

Other components used are:

1. 12V DC adaptor/power source.
2. Light bulb

Literature:

BLUETOOTH MODULE HC - 05

1)A cool model which can add two way wireless.

2)It communicates between two micro controller or communicate with any device with Bluetooth functionality.

3)The model communicates with the help of USART at 9600 broad rate.

RELAY MODULE

1)A Relay is an electrically operated switch.

2)It consists of a set a set of input terminals for a single or multiple control signals.

3)Relays are used to control a circuit by an independent low power signal.

4)In modern electric power systems these functions are performed by digital instruments still called protective relays.

ARDDUINO UNO

1)Arduino is an open source electronics platform based easy to use hardware.

2)Arduino uno is a microcontroller board based on 8-bit ATmega328P.

3)Arduino Uno has 14 digital I/O pins (out of which six can be used as PWM outputs), 6 analog input pins, a USB connection, A Power barrel jack, an ICSP header and a reset button.

CONNECTIONS:

Relay:

Relay IN1 connected to Pinout 2 Arduino

Relay IN2 connected to Pinout 3 Arduino

Relay In3 connected to Pinout 4 Arduino

Relay In4 connected to Pinout 5 Arduino

VCC to 5V

GND to GND

Bluetooth:

RX to Pinout 10

TX to Pinout 11

5V to 5V

GND to GND

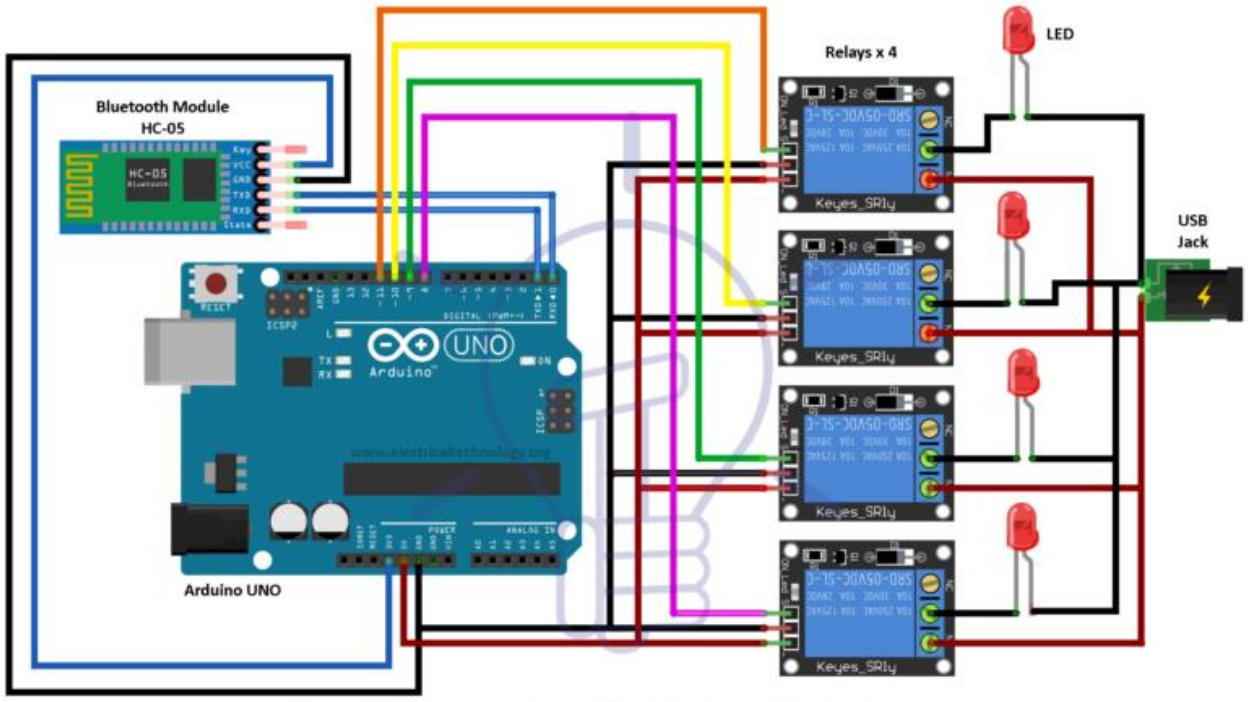
CODE:

```
#include <SoftwareSerial.h>

SoftwareSerial mySerial(10, 11);

#define relay1 2

#define relay2 3

#define relay3 4

#define relay4 5

char val;

void setup() {

pinMode(relay1,OUTPUT);

pinMode(relay2,OUTPUT);

pinMode(relay3,OUTPUT);

pinMode(relay4,OUTPUT);

digitalWrite(relay1,HIGH);

digitalWrite(relay2,HIGH);

digitalWrite(relay3,HIGH);

digitalWrite(relay4,HIGH);

mySerial.begin(9600);

Serial.begin(9600);

}

void loop() {

if( mySerial.available() >0 ) {
```

```
val = mySerial.read();
Serial.println(val);
}
//Relay is on
if( val == '1' ) {
digitalWrite(relay1,LOW); }
else if( val =='2' )
{
digitalWrite(relay2,LOW); }
else if( val == '3' ) {
digitalWrite(relay3,LOW); }
else if( val == '4' ) {
digitalWrite(relay4,LOW); }
//relay all on
else if( val == '9' ) {
digitalWrite(relay1,LOW);
digitalWrite(relay2,LOW);
digitalWrite(relay3,LOW);
digitalWrite(relay4,LOW);
}
//relay is off
else if( val == 'A' ) {
```

```
digitalWrite(relay1,HIGH); }

else if( val == 'B' ) {

digitalWrite(relay2,HIGH); }

else if( val == 'C' ) {

digitalWrite(relay3,HIGH); }

else if( val == 'D' ) {

digitalWrite(relay4,HIGH); }

//relay all off

else if( val == 'I' ) {

digitalWrite(relay1,HIGH);

digitalWrite(relay2,HIGH);

digitalWrite(relay3,HIGH);

digitalWrite(relay4,HIGH);

}

}
```

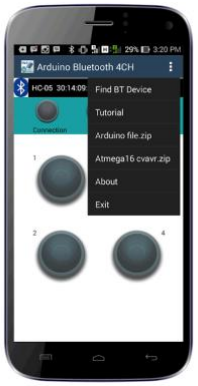
Circuit Diagram



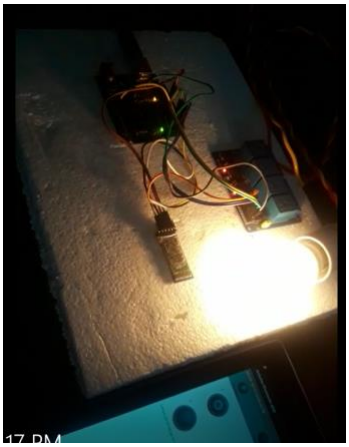
Smart Home Automation System Project

SCREENSHOTS:

Bluetooth application



Project :



Video link:

https://drive.google.com/file/d/1-beqZY1z6mUt_PJzot1lWNg2b0jQB59j/view?usp=sharing

Signature of the Students

Signature of the Guide