Controlling Bulb Using Mobile

Introduction:

To turn a bulb on or off we need a switch.But a bulb can be turned on or off by mobile.Using bluetooth we can easily control a bulb.Here,we have created scope to control two bulbs by mobile which operating system is android.

Equipments:

1.Arduino Uno

2.Bluetooth module(HC-05)

3.IC L293D

4.Bulb

5.Diode

6.Relay

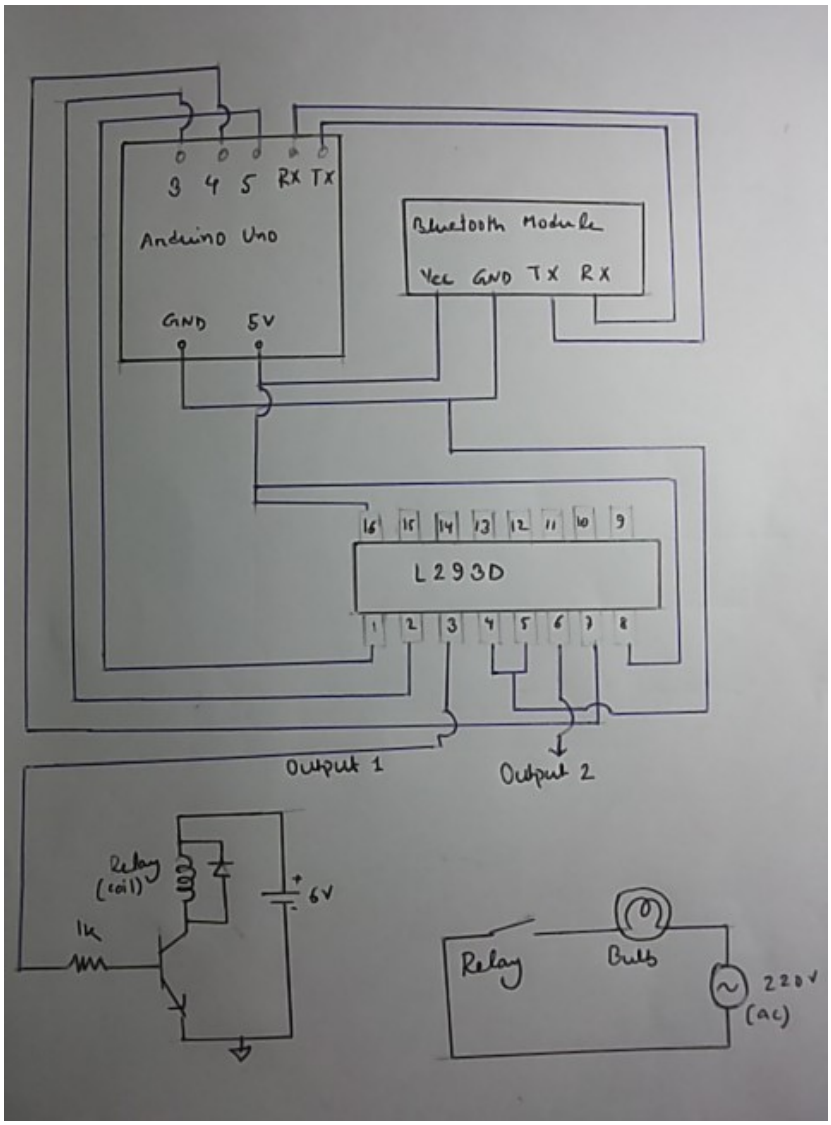
7.Resistor(1K)

Working Principle:

If we send command from mobile via Bluetooth then Bluetooth module will receive the command and send it to arduino.Arduino will send supply of 5 volt to the motor driver according to the code.The output of the IC is connected with a bjt which is used to make a relay active.When bjt gets on,the coil of the relay is energized.

We used commands ‘1’ , ‘2’ , ‘0’ , ‘9’.If we press ‘1’ , bulb1 will be turned on.If we press ‘2’ , bulb2 will be turned on.Bulb1 can be turned off by ‘0’ and bulb2 can be turned off by ‘9’.

Circuit Diagram:



Code:

```
int Pin1 = 3; // pin 2 on L293D IC

int Pin2 = 4; // pin 7 on L293D IC

int enablePin = 5; // pin 1 on L293D IC

int state;

int flag=0;


void setup() {

   // sets the pins as outputs:

   pinMode(Pin1, OUTPUT);

   pinMode(Pin2, OUTPUT);

   pinMode(enablePin, OUTPUT);

   digitalWrite(enablePin, HIGH);

   Serial.begin(9600);

}

void loop() {

   if(Serial.available() > 0){

     state = Serial.read();

     flag=0;

   }

   if (state == '0') {

       digitalWrite(Pin1, LOW);
```

```
    if(flag == 0){
      Serial.println("Light 1: off");
      flag=1;
    }
  }
else if (state == '9') {
    digitalWrite(Pin2, LOW);
    if(flag == 0){
      Serial.println("Light 2: off");
      flag=1;
    }
  }

  else if (state == '1') {{
    digitalWrite(Pin1, HIGH);
    if(flag == 0){
      Serial.println("Light 1:On");
      flag=1;
    }   }}
  else if (state == '2') {
    digitalWrite(Pin2, HIGH);
    if(flag == 0){
```

```
        Serial.println("Light 2:On");
        flag=1;
      }   }
}
```

Troubleshooting:

1.Bluetooth module was not working.We found that there was a problem in some holes in breadboard.Then we completed circuit avoiding those holes.

2.Bluetooth module was receiving command but light was not working according to Command.There was a problem in the code.we rechecked the code and solved the problem.

Applications:

Can be used to control light,fan,motor,ac and so on.

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