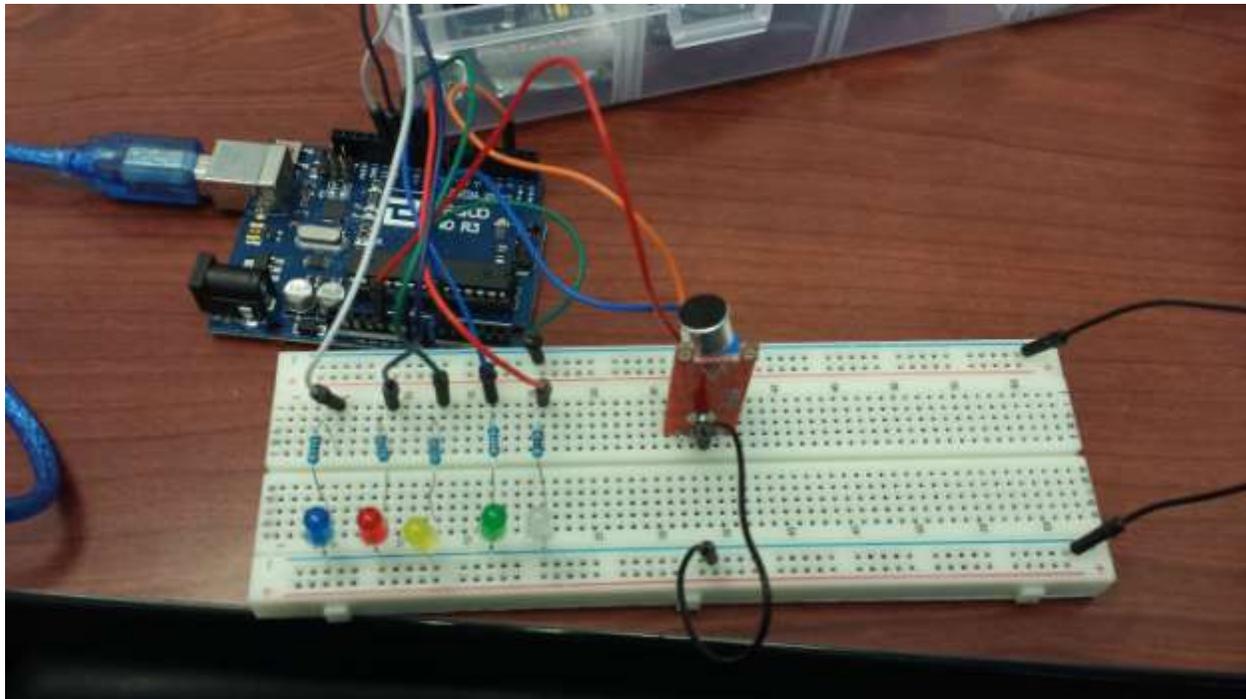


In this project we are going to use the sound sensor to turn the LED lights ON and OFF depending on the strength of the song being played. A prototype of this nature would be used building party lights. The LED lights should be of different colors.

### **COMPONENTS:**

1. Arduino Uno Board with UBS Cord
2. 5 LED Lights
3. 5 x 330 ohm Resistors
4. Sound Sensor Module
5. Jumper wires.
6. Bread Board

### **Setting Up:**



1. Put the 5 LEDs on the Bread Board with the shorter Leg (Negative) going into the Bread Board's negative slots.
2. Install the Resistors in the same line with the positive legs of the LEDs. The other leg of the Resistor must go across the center divider of the Bread Board.
3. Install one end of five jumper wires in line with the Resistors. Insert the other ends of the wires into pins 8,9,10,11,12 of the Arduino digital pins.
4. Insert one end of a jumper wire into ground pin of the Arduino and the other end into the Negative rail of the Bread Board where you inserted the Negative legs of the LEDs.
5. Insert the Sound Sensing Module into the Bread Board.
6. Insert one end of four jumper wires in-line with the Sensor pins in the Bread Board. The other ends of the wires must be hooked to the Arduino Board as follows:
  - A0- hook it to A0 (Arduino)
  - GND-hook it to GND (Arduino)
  - + hook it to 5V (Arduino)
  - DO-hook to Digital pin 2
7. Connect the Arduino Board to the computer using the USB Cord.
8. Open the Arduino IDE and upload the program onto the Arduino Board.
9. Play a song from your phone just above the Sound Sensor's Speaker.

If everything is hooked well the LEDs will start flashing as the song plays.

## **PROGRAM:**

```
int DO = 2; //Pin for Digital Output - DO
int AO = A0; // Pin for Analog Output - AO
int threshold = 523; //Set minimum threshold for LED lit
int sensorvalue = 0;

void setup() {
  Serial.begin(9600);
  pinMode(8, OUTPUT);
  pinMode(9, OUTPUT);
  pinMode(10, OUTPUT);
  pinMode(11, OUTPUT);
  pinMode(12, OUTPUT);
}

void loop() {
  sensorvalue = analogRead(A0); //Read the analog value
  Serial.print("Analog: ");
  Serial.print(sensorvalue); //Print the analog value
  Serial.print(" ");
  Serial.print("Digital: ");
  Serial.println(digitalRead(DO)); //Print the digital value

  if (sensorvalue >= threshold) { //Compare analog value with threshold
    digitalWrite(8, HIGH);
    digitalWrite(9, HIGH);
    digitalWrite(10, HIGH);
    digitalWrite(11, HIGH);
    digitalWrite(12, HIGH);

  }
  else {
    digitalWrite(8, LOW);
    digitalWrite(9, LOW);
    digitalWrite(10, LOW);
    digitalWrite(11, LOW);
    digitalWrite(12, LOW);

  }
}
```