Voice Sound Indicator
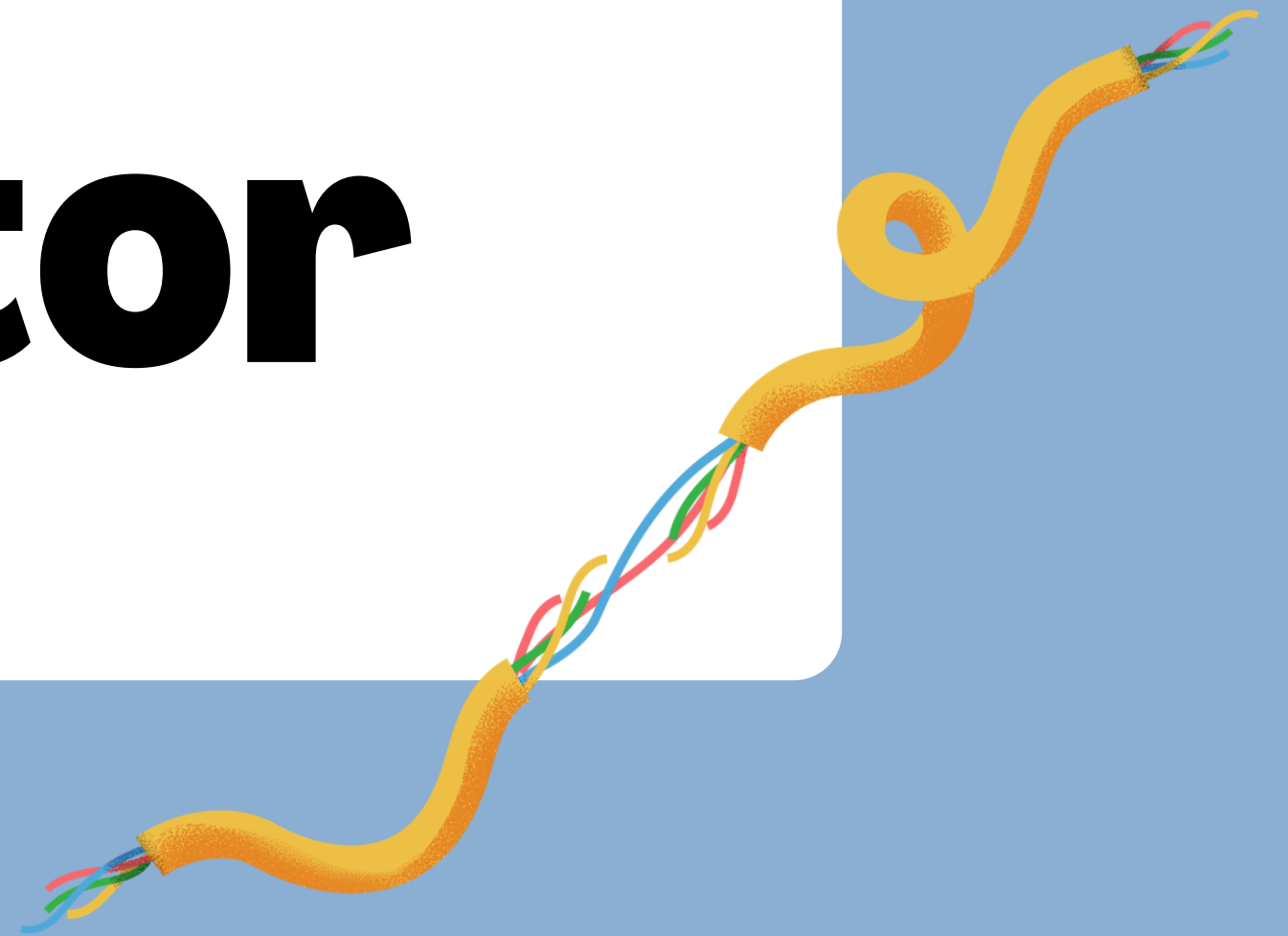
CONTENT

- Introduction
- Block diagram
- Components of the circuit
- Circuit diagram
- Working & Applications
- Conclusion

INTRODUCTION

This is a simple circuit that can detect sounds by using a common condenser microphone. Sensitivity is variable. The circuit's output becomes high each time as sound is detected; otherwise it is in low level. You can use it in simple robots for sound responding (e.g. reaction -> when you clap your hands). This circuit recognize human voice as a common sound (you can't use it for voice recognition).

COMPONENTS

1. Arduino Uno
2. LED
3. 220ohm resistor
4. Sound sensor KY038
5. Breadboard
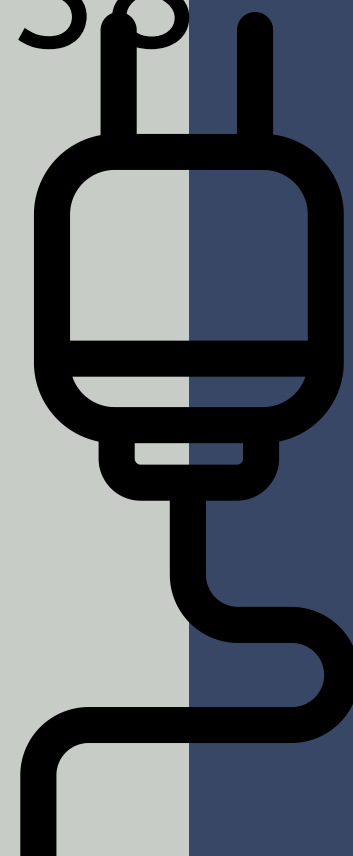
CIRCUIT DIAGRAM
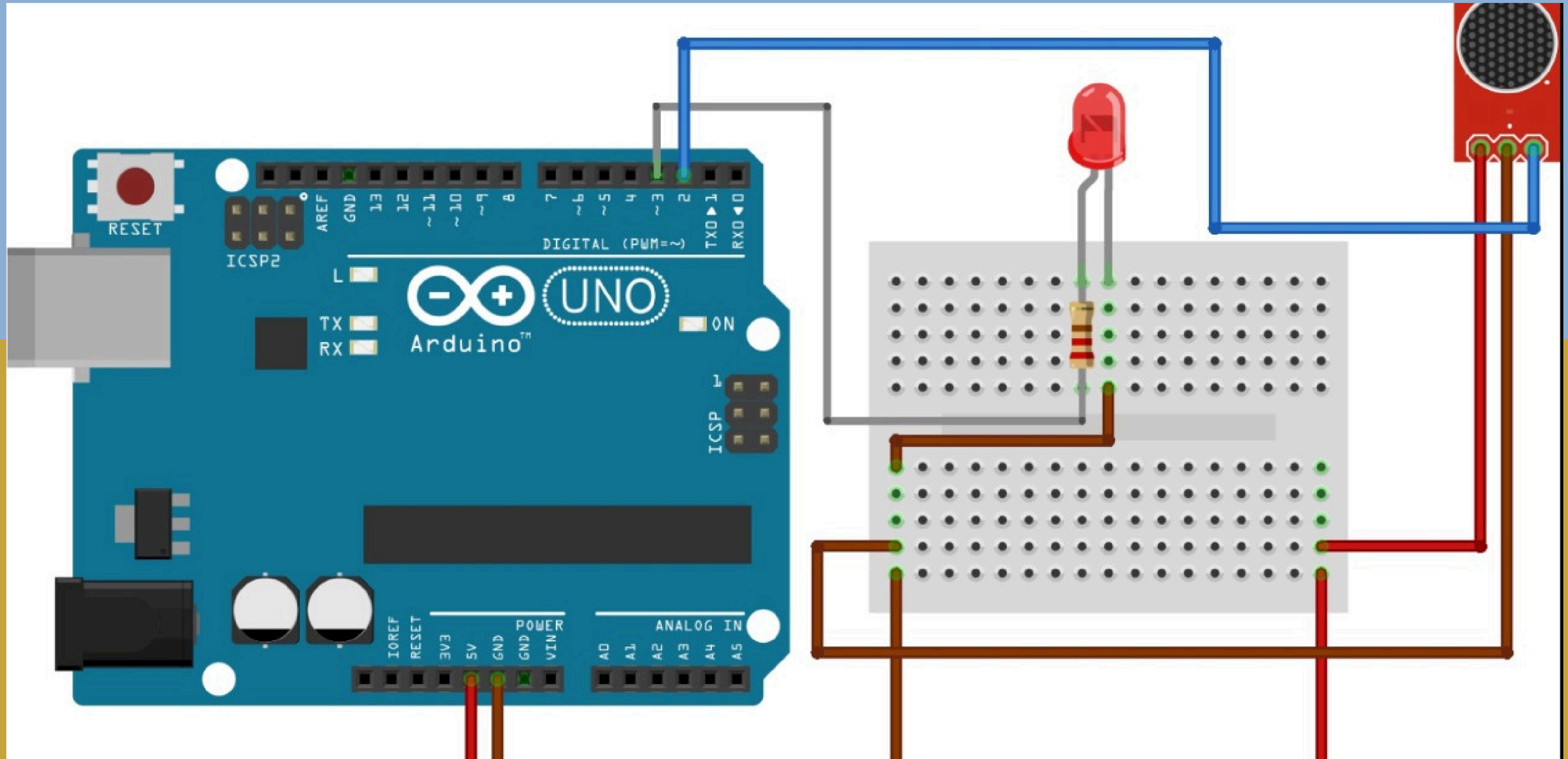
WORKING

A SOUND SENSOR PROJECT TYPICALLY INVOLVES USING A MICROPHONE OR SOUND SENSOR TO DETECT SOUND LEVELS. WHEN SOUND IS DETECTED, THE SENSOR GENERATES AN ELECTRICAL SIGNAL PROPORTIONAL TO THE SOUND INTENSITY. THIS SIGNAL CAN THEN BE PROCESSED BY A MICROCONTROLLER OR A DEVELOPMENT BOARD LIKE ARDUINO. YOU CAN PROGRAM THE MICROCONTROLLER TO TRIGGER CERTAIN ACTIONS OR RESPONSES BASED ON THE SOUND LEVEL DETECTED, SUCH AS TURNING ON LIGHTS, ACTIVATING AN ALARM, OR LOGGING DATA. IT'S A POPULAR PROJECT FOR BEGINNERS TO LEARN ABOUT SENSORS AND MICROCONTROLLER PROGRAMMING.

WORKING PRINCIPLE

1. Sound Reception: Microphone captures sound waves.
2. Electrical Conversion: Waves are converted to electrical signals.
3. Amplification: Signals are amplified for processing.
4. Processing: Extracting sound intensity or frequency.
5. Output: Presenting processed data.
6. Calibration: Ensuring accuracy and adaptability.
7. Adjustment: Fine-tuning sensitivity and range.

CODE

```
CONST INT SOUNDSENSORPIN = 8; // PIN CONNECTED TO THE SOUND SENSOR
CONST INT LEDPIN = 7;         // PIN CONNECTED TO THE LED

VOID SETUP()
{
  PINMODE(SOUNDSENSORPIN, INPUT); // SET SOUND SENSOR PIN AS INPUT
  PINMODE(LEDPIN, OUTPUT);        // SET LED PIN AS OUTPUT
}

VOID LOOP()
{
  INT SOUNDSENSORSTATUS = DIGITALREAD(SOUNDSENSORPIN); // READ THE STATUS OF THE SOUND
SENSOR

  IF (SOUNDSENSORSTATUS == HIGH) // IF SOUND IS DETECTED
  {
    DIGITALWRITE(LEDPIN, HIGH);  // TURN ON THE LED
  }
  ELSE
  {
    DIGITALWRITE(LEDPIN, LOW);   // TURN OFF THE LED
  }
}
```

APPLICATIONS

1. SECURITY SYSTEMS
2. INDUSTRIAL MONITORING
3. ENVIRONMENTAL MONITORING
4. HOME AUTOMATION
5. HEALTHCARE
6. AUTOMOTIVE
7. SMARTPHONES AND WEARABLES
8. ENTERTAINMENT

CONCLUSION

In conclusion, our sound sensor project effectively detected and measured sound levels, offering valuable insights into its applications across different domains. This project lays the groundwork for future advancements in sound sensing technology."

1. CHAT GPT

2.HTTPS://WWW.SCRIBD.COM/DOCUMENT/109965087/SOUND-DETECTOR-CIRCUIT-TERM-PROJECT-REPORT

3.HTTPS://WWW.SLIDESHARE.NET/JEEVJOHN2/SOUND-SENSOR-92256085

THANK YOU !