

Classroom Audio Monitoring System

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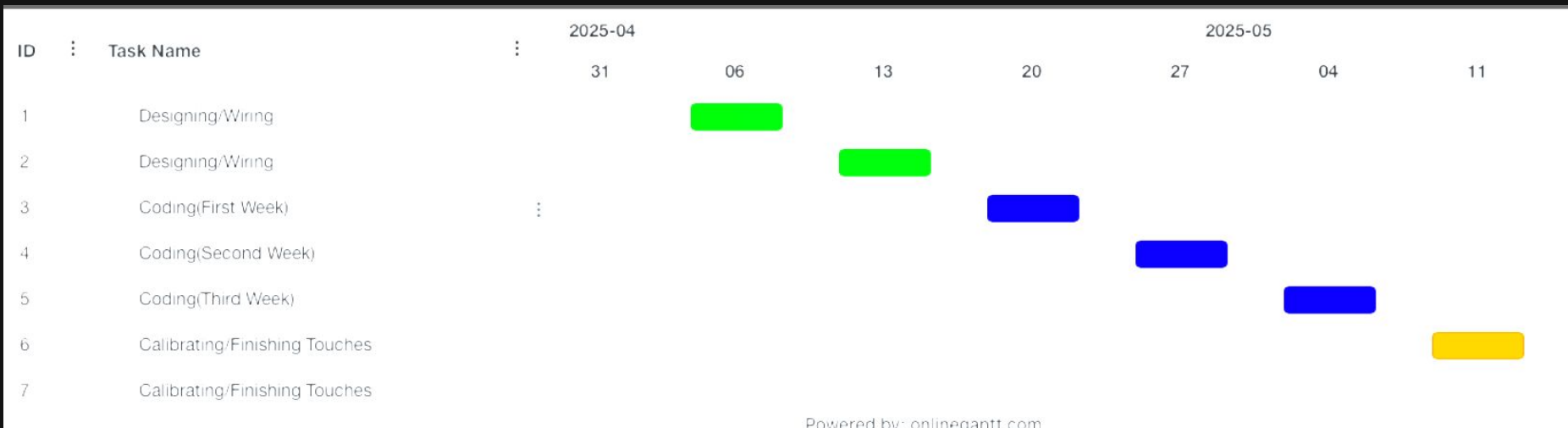
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Executive Summary

Imagine a classroom where keeping noise levels in check doesn't always fall on the teacher's shoulders. That's exactly what this simple device, built with Arduino and easy-to-find components, aims to achieve. It uses a KY-38 microphone sensor to listen in on the classroom's sound levels. If things get too loud, the Arduino steps in and signals a piezo buzzer to give a gentle beep, a friendly reminder for students to quiet down, all without the teacher having to say a word.

By taking over the job of monitoring noise, this device helps teachers spend less time managing disruptions and more time focusing on teaching and supporting their students. The result? A calmer, more organized classroom where everyone can concentrate better and learning just flows more smoothly

Gantt Chart



Task Distribution

Amanda Lara

Coding

Srirudra Naidu

Coding

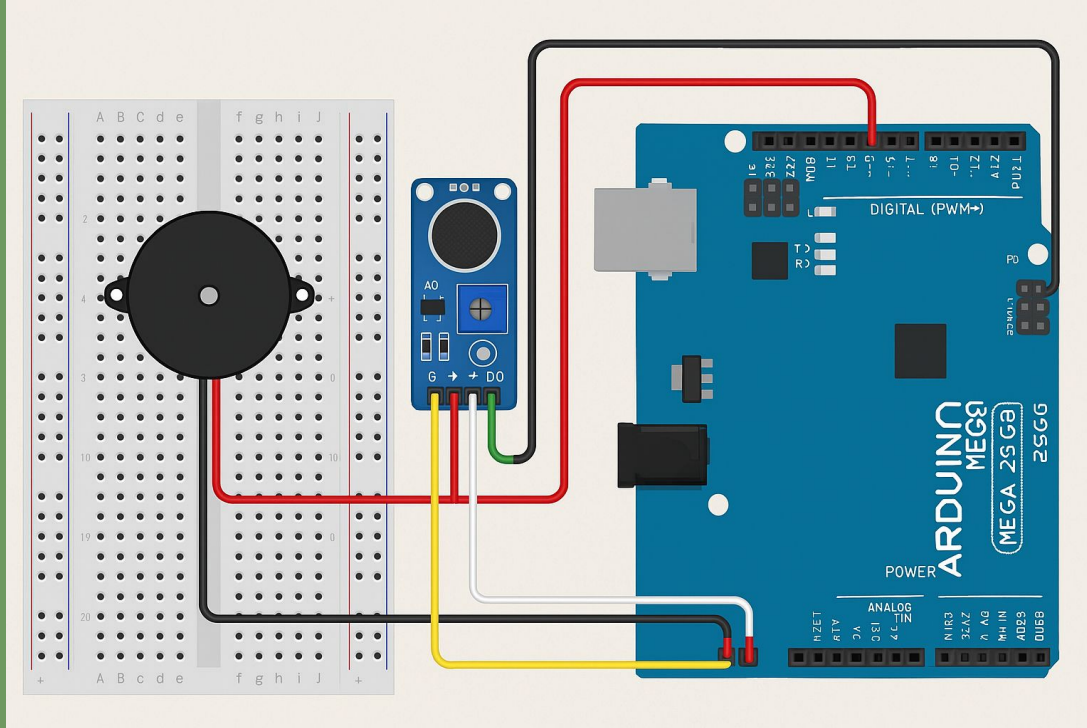
Documentation

Creating Formal Submissions to show progress and Achievements.

Circuit Assembling

Creating Raw Circuit with all sensors for testing, and making sure all connections are working and are in their respective places.

Schematic



Component List & Functions

1. **Arduino Mega 2560** – The brain of the circuit, handling input from sensors and controlling outputs.
2. **KY-038 Microphone Module** – Detects sound levels and sends an analog or digital signal to the Arduino.
3. **Piezo Buzzer** – Produces sound when activated by the Arduino, often used for alerts or notifications.
4. **Breadboard** – Allows easy prototyping and connection of components without soldering.
5. **Jumper Wires** – Used to connect components electrically on the breadboard.
6. **Resistors (if applicable)** – Regulate current flow to protect sensitive components like the buzzer.

KY-038 Microphone Module – This listens for sound and sends a signal to the **Arduino Mega 2560**.

- If connected via **AO (Analog Output)**, it provides a variable voltage corresponding to sound intensity.
- If connected via **DO (Digital Output)**, it sends a HIGH signal when the detected sound crosses a threshold.

Arduino Mega 2560 – This acts as the **controller** and processes the input from the microphone.

- It reads the microphone's signal and determines when to activate the **piezo buzzer**.
- If using the **AO pin**, the Arduino can analyze varying sound levels.
- If using **DO**, it can detect whether sound is present or not (binary response).

Piezo Buzzer – This serves as the **output device** and produces sound when triggered.

- The Arduino **sends a signal** to the buzzer when it detects a significant sound level.
- The buzzer then produces a tone to alert or notify the user.

Breadboard & Jumper Wires – These ensure all components are correctly wired and connected.

- The breadboard facilitates easy connections without permanent soldering.
- Jumper wires establish electrical connections between the components

Costs

Component Cost Estimates

Component	Average Cost (USD)
Arduino Mega 2560	\$40 - \$50
KY-038 Microphone Module	\$1 - \$3
Piezo Buzzer	\$5 - \$10
Breadboard	\$6 - \$30
Jumper Wires	\$5 - \$10 (set)
Resistors	\$0.01 - \$0.50 each (bulk pricing varies)
Total Estimated Cost	\$57 - \$103

**THANK
YOU!**