

Don't Upset the Neighbors!

An ambient noise alarm using Arduino

The problem

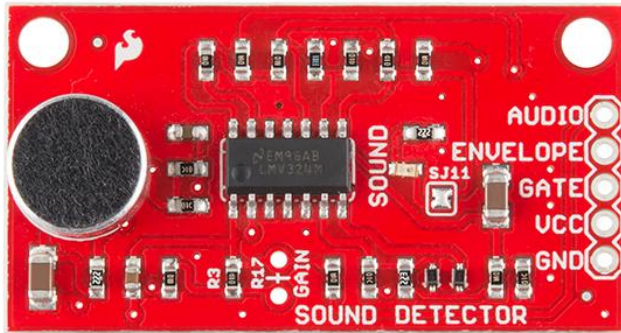
New apartment is strict about noise pollution.

I tend to speak far louder than necessary. Causing my Girlfriend to raise concern that I may be upsetting the neighbors.

The “solution”

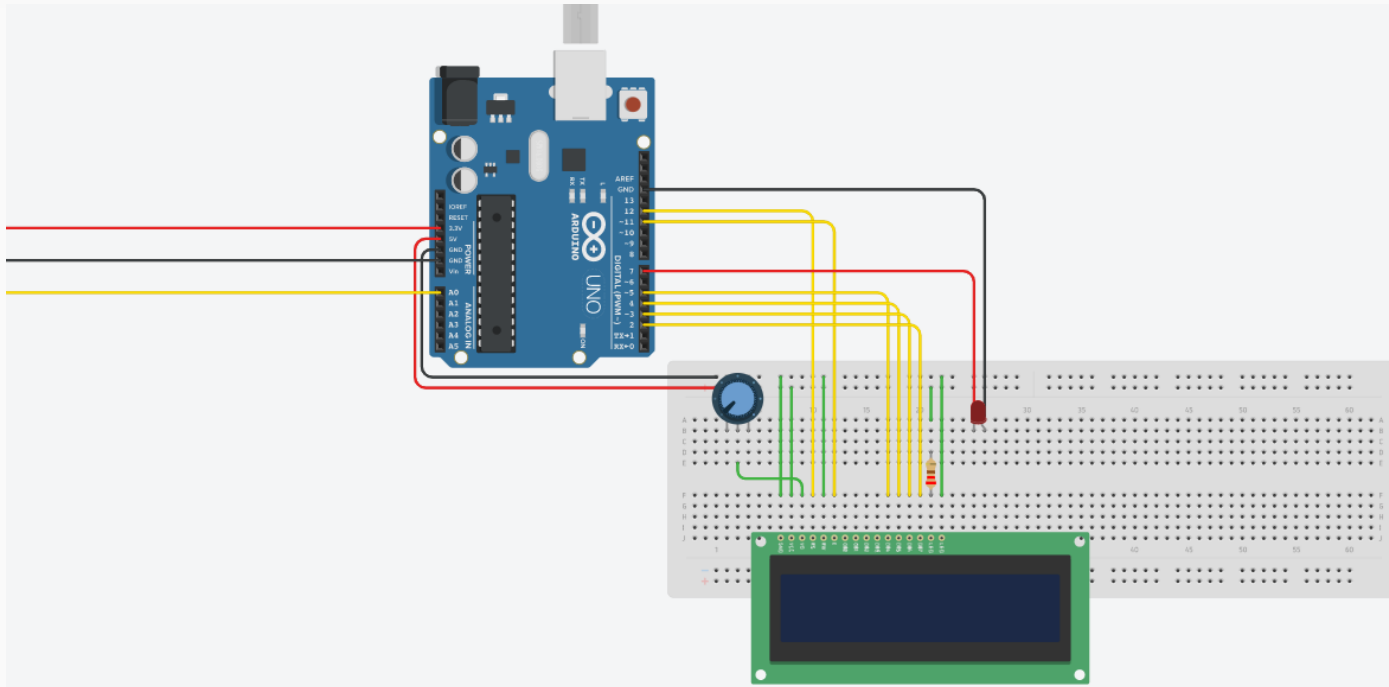
- Use a sound sensor to measure the noise level at my desk.
- Add an alarm system to trigger at a certain noise level.

The sound sensor

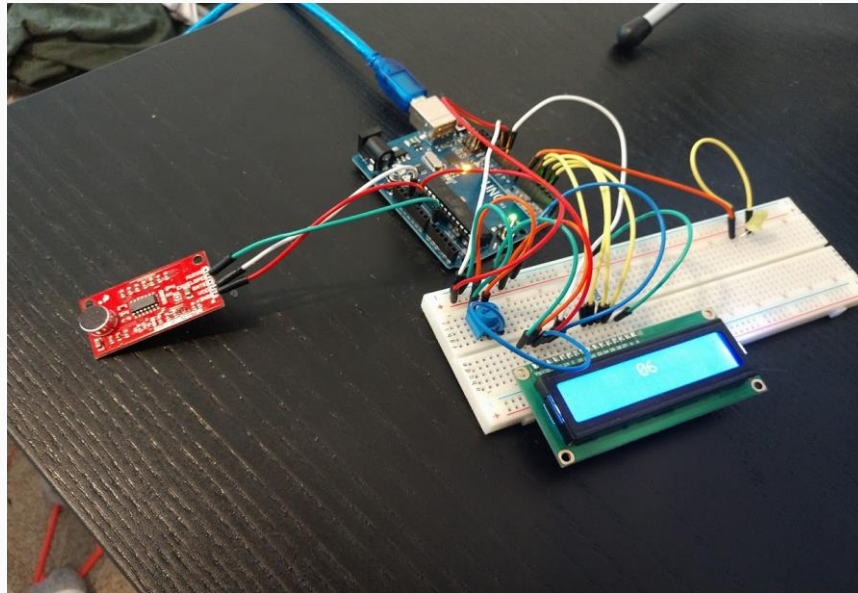


The envelope pin transmits an analog signal depending on the amplitude (loudness) of the sound.

Schematics



Final Product



Calibration

The LCD displays a numerical value for my reference but this value is just the analog value sent to the Arduino.

We measure sound in Decibel but for this application all that matters is if I'm audible from outside of my apartment.

Problem: Bumps and Thuds

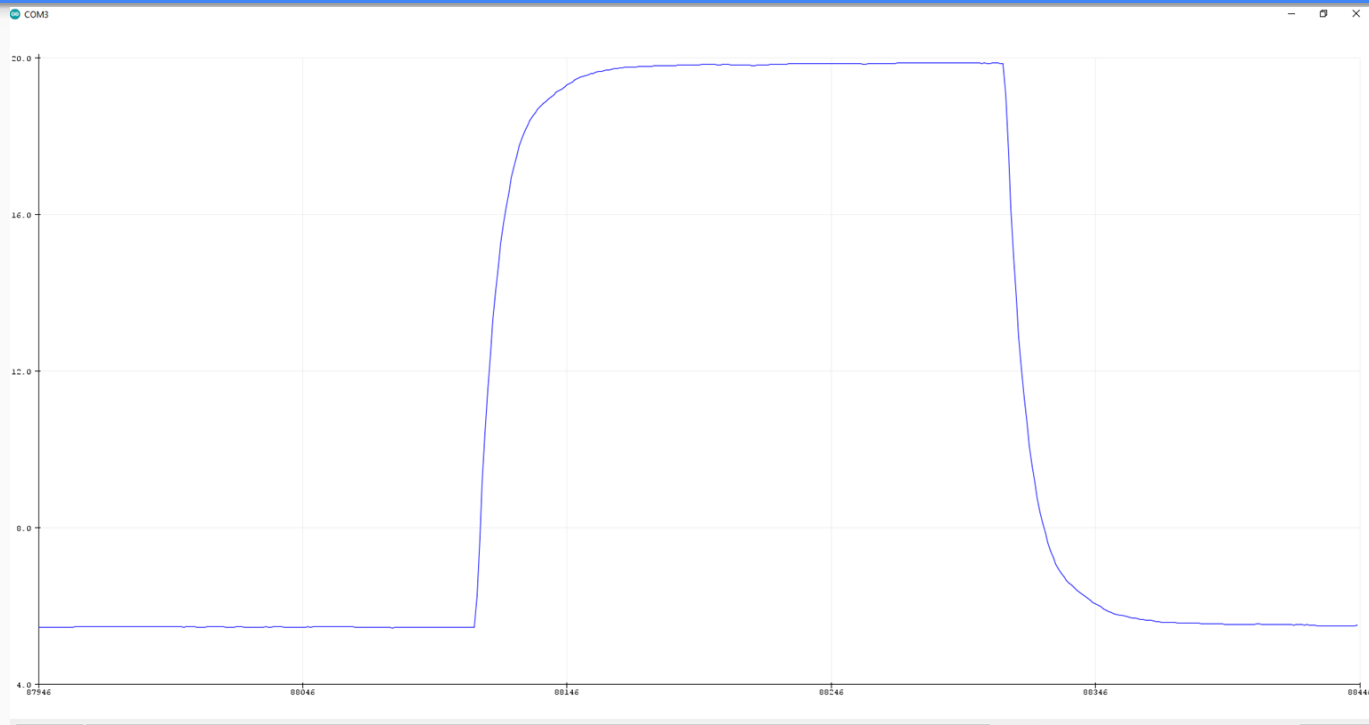
Loud but short sounds aren't a problem but still set off the alarm.

Solution: Average measurements

Don't set off the alarm if something load is measured.

Set off the alarm when there is persistent noise

Hitting the desk



Demonstration

