



# The Piano Staircase

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# Motivation

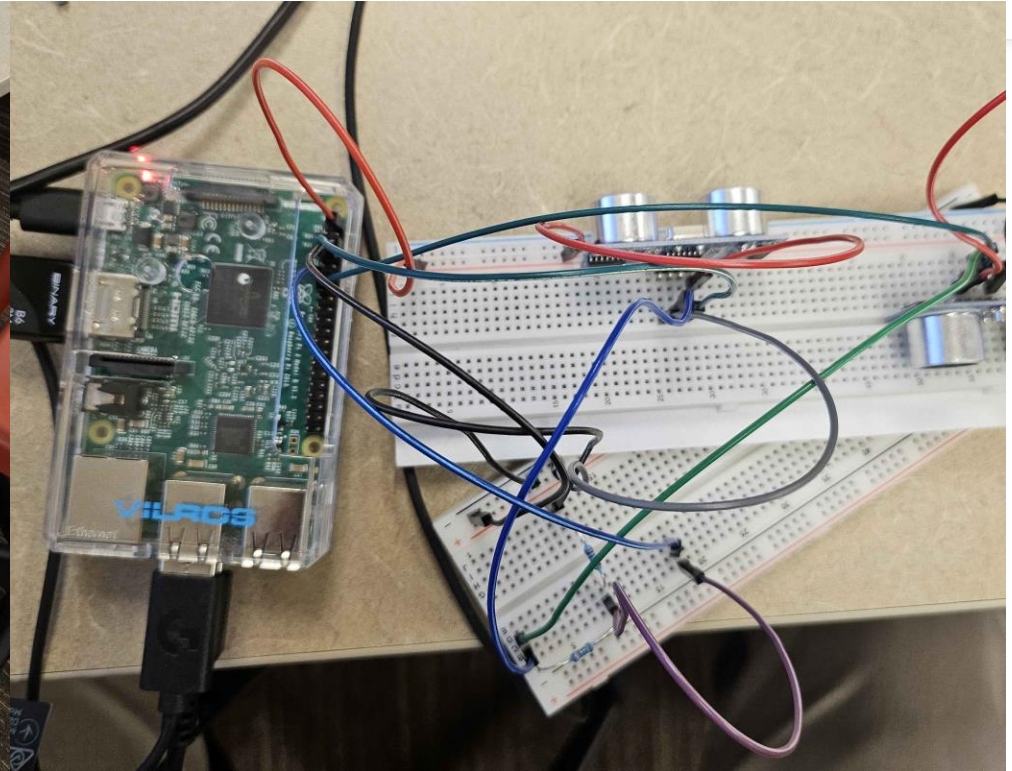
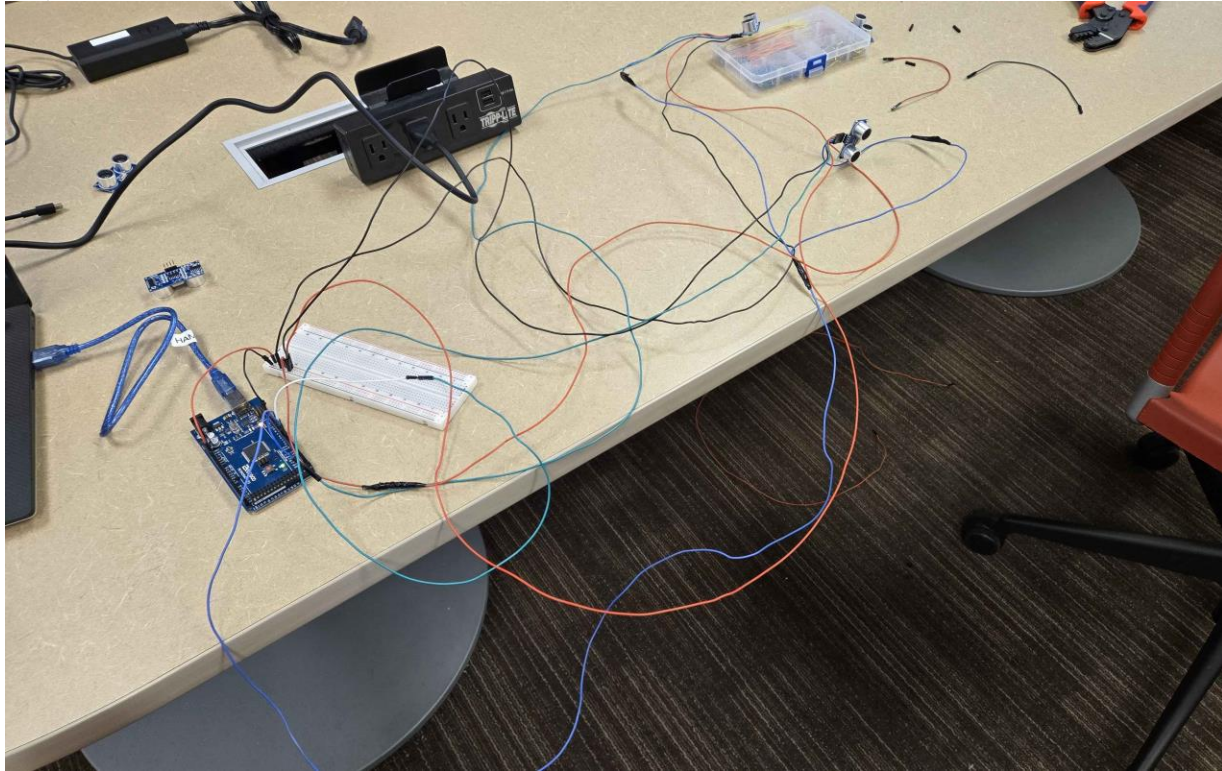
- This was a previous project several group members worked on and were excited to pick up again
- Wanted to not only have a coding portion but a hardware portion as well
- Wanted to have fun and create a tangible project to show off in the school



# Pitch

- Piano Staircase
- Brighten up Russ Building
- Showcase Student Engineering

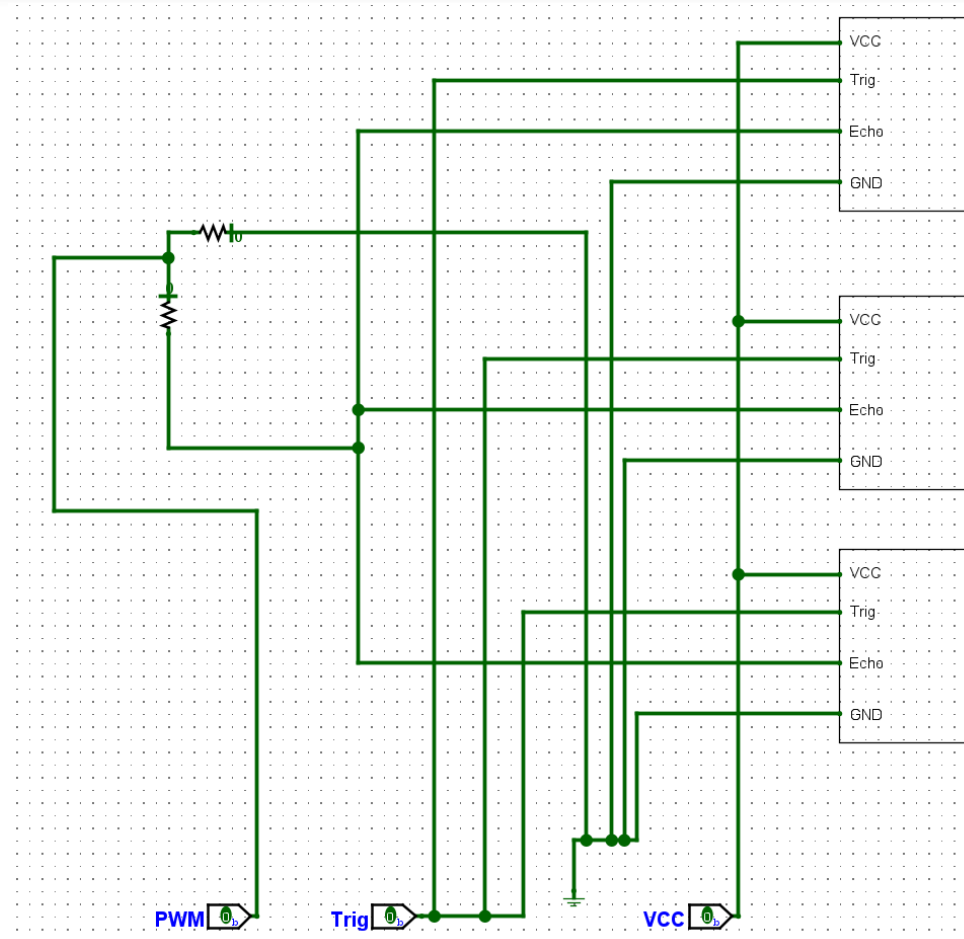
# Proof of Concept





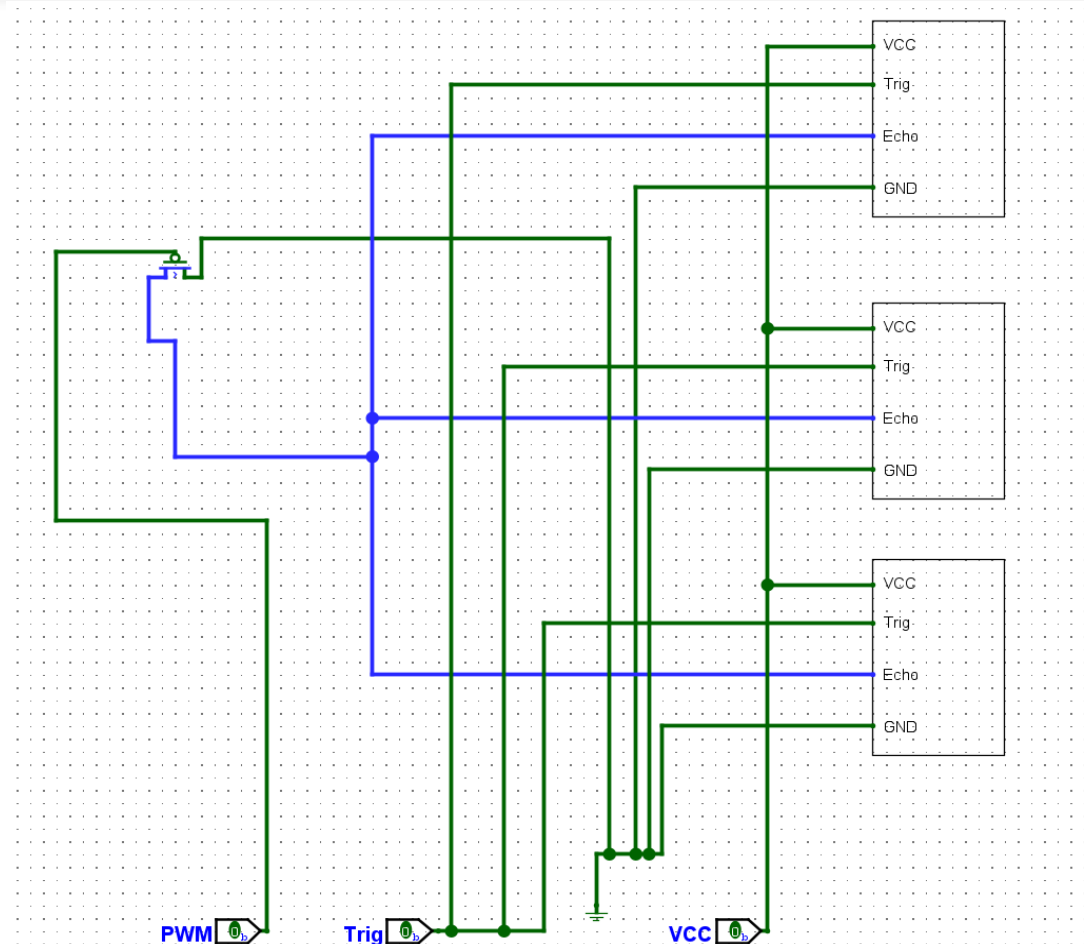
# Circuit

- V1 Raspberry Pi (voltage divider)



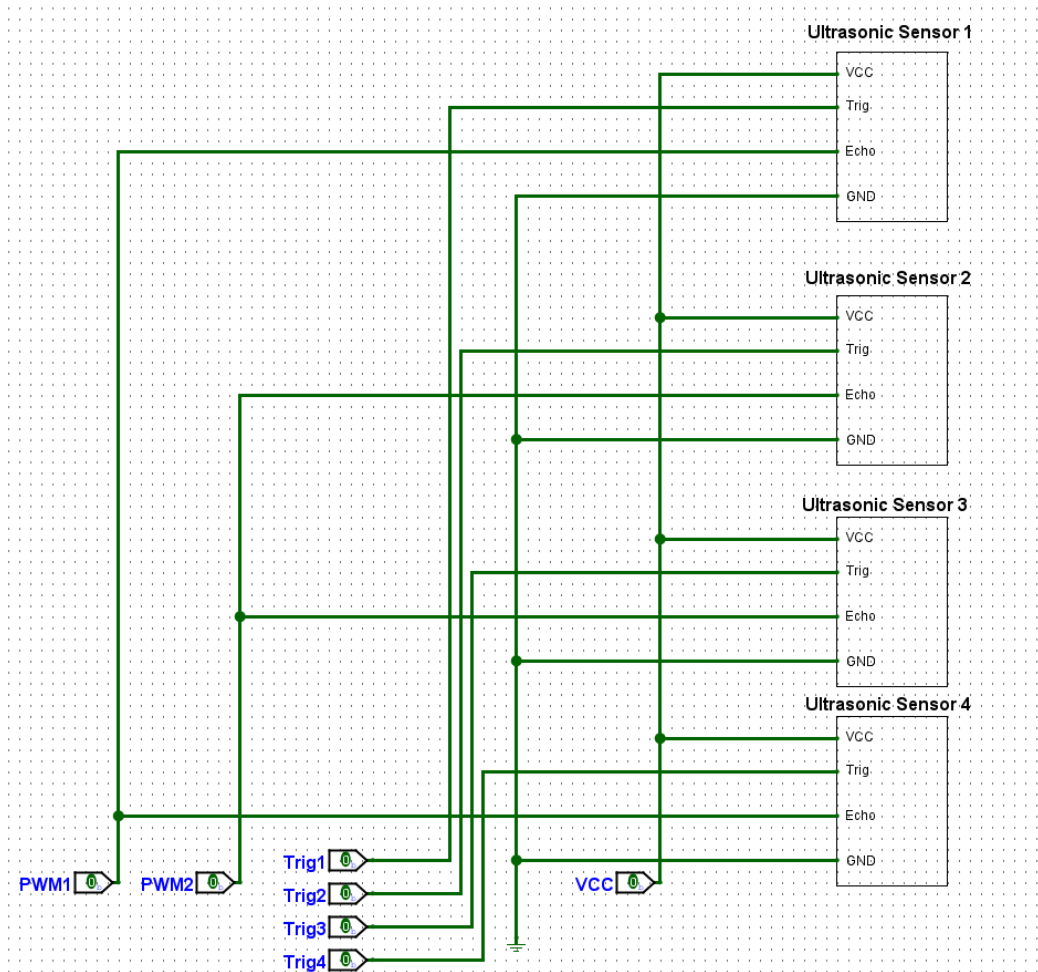
# Circuit

- V2 Transistor with two voltage sources and transistor



# Circuit

- V3 Arduino





# Front End

- Svelte Kit UI
- Connection between Webapp and Pi



# Back End

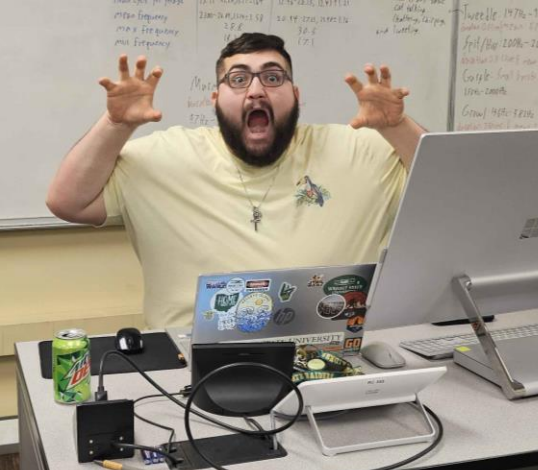
- Arduino Mega 2560 R3 connected to Raspberry Pi via USB
- Raspberry Pi receives sound note to play
- Raspberry Pi uses note to determine wav to play
- Each module contains two HC-SR04 ultrasonic sensors
- Two triggers and one echo per module



# Road Map

- Motion sensor to turn on the system
- Audio Uploader
- Full Staircase
- Permeant Install
- 3D Print Ultrasonic Sensor Boxes







LOONEY TUNES

