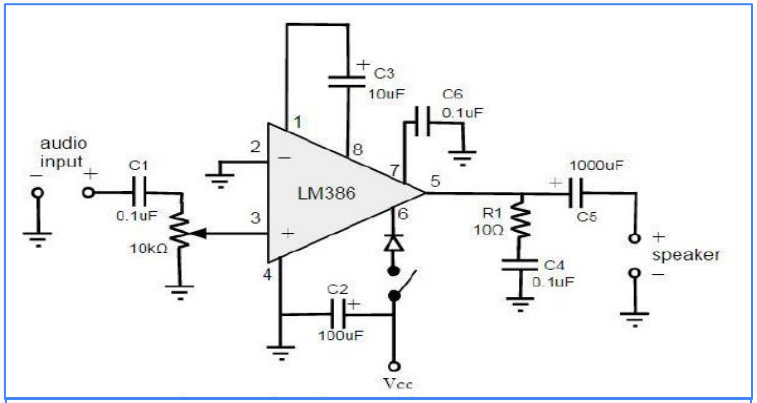
Lab 2: Analog Circuits

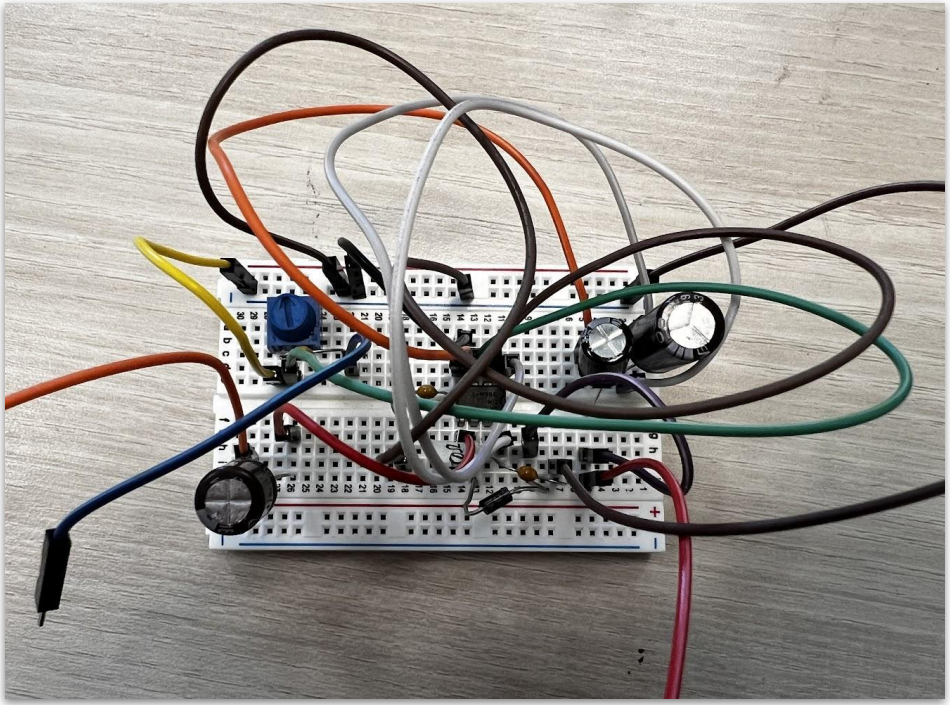
Joshua Lozada
Ruben Gonzalez
ECE 5 - UC San Diego

Part 2: Audio Amplifier

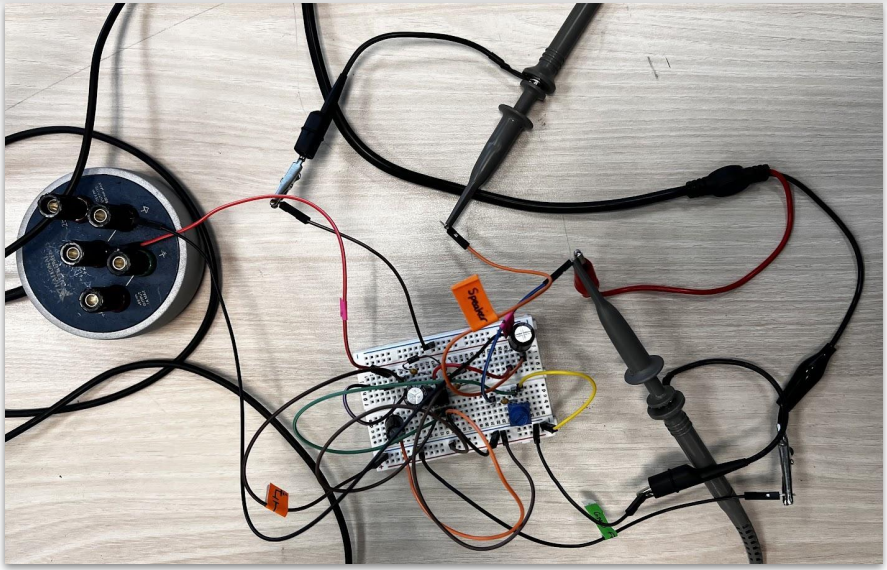
Challenge #3a - Audio Amplifier (Breadboard Circuit)



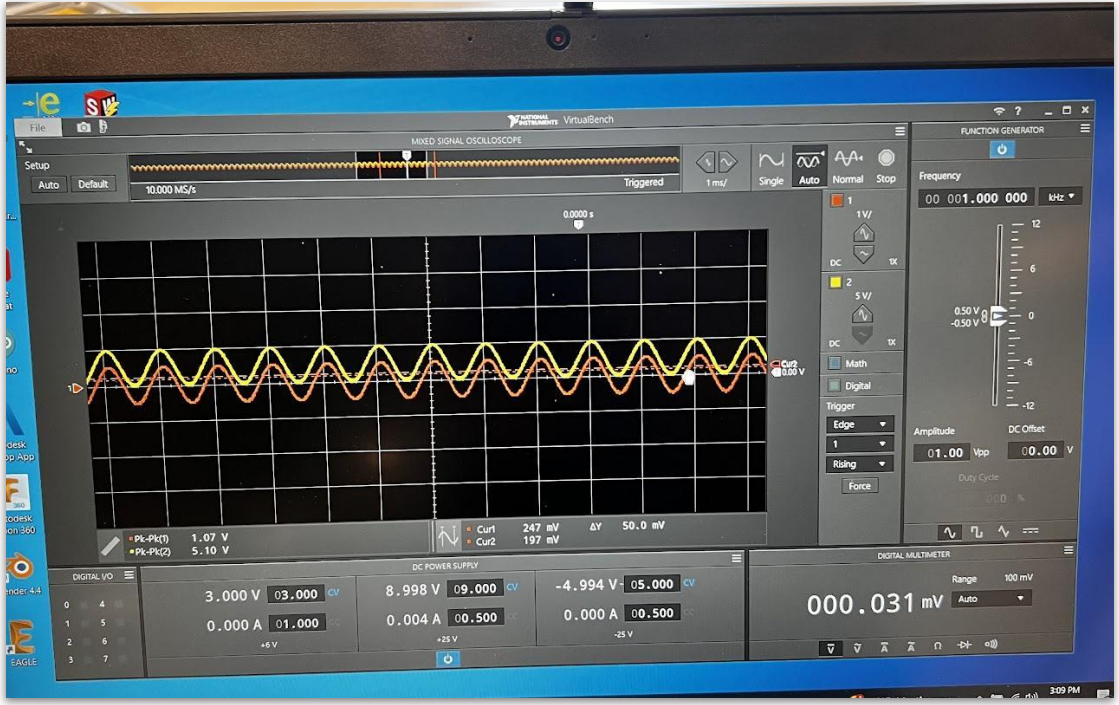
Schematic of Audio Amplifier Circuit



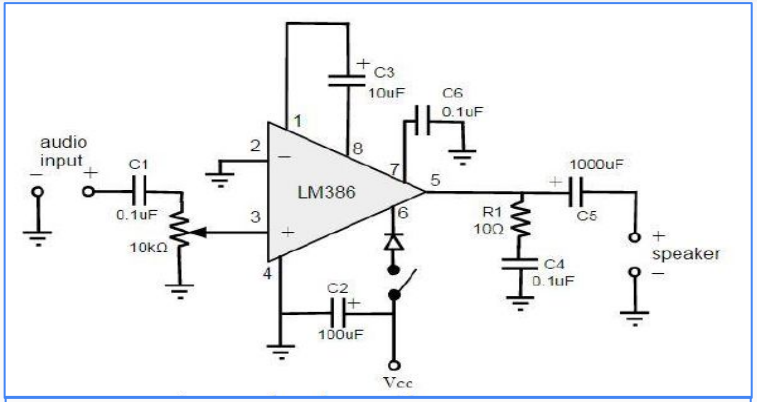
Show a picture of your breadboarded circuit being connected to the virtual bench for testing (function generator with o-scope channel 1 used as your audio input and o-scope channel 2 connected to your audio output)



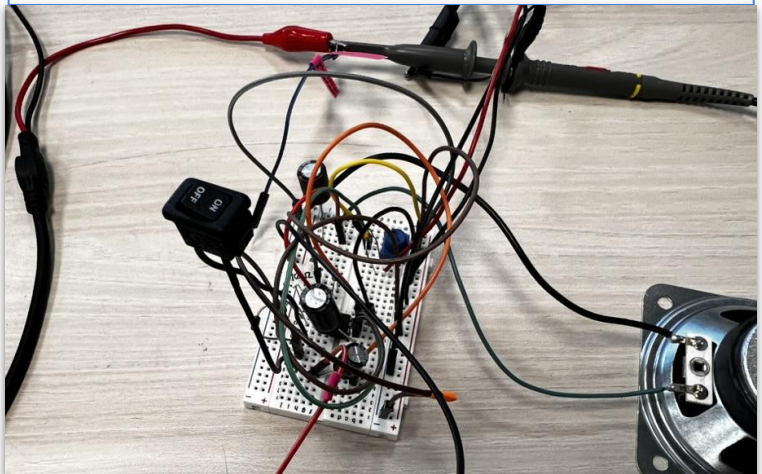
Show a screenshot of your virtual bench interface screen illustrating your (time domain) signals input (ch1) and output (ch2)

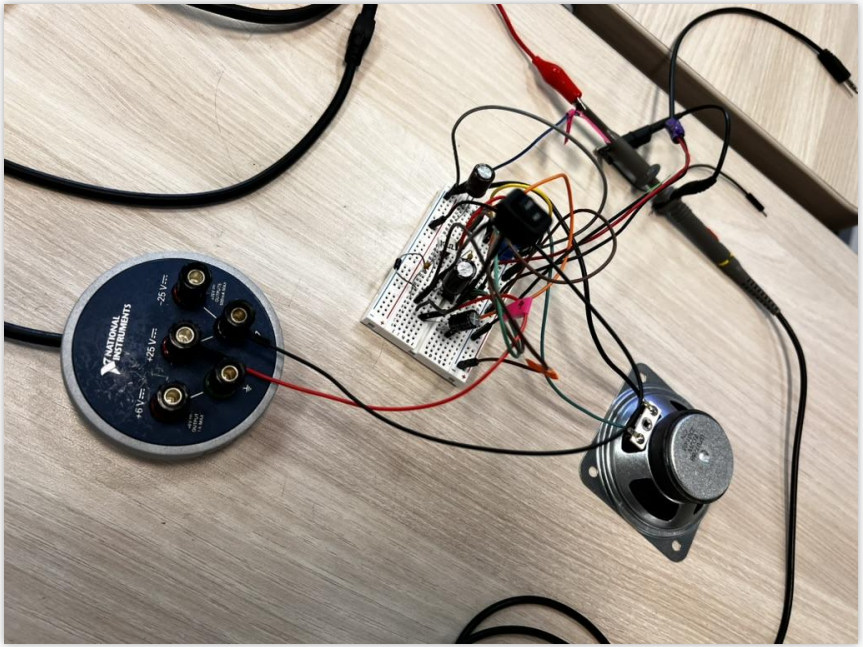


Challenge #3b - Audio Amplifier (Breadboard with Soldered Parts)

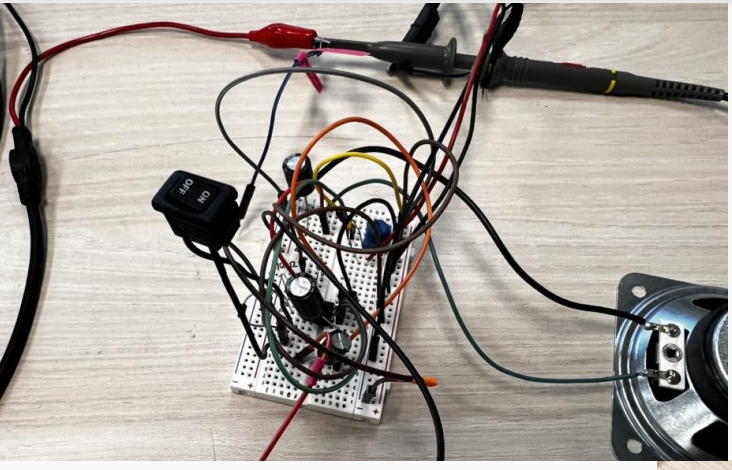


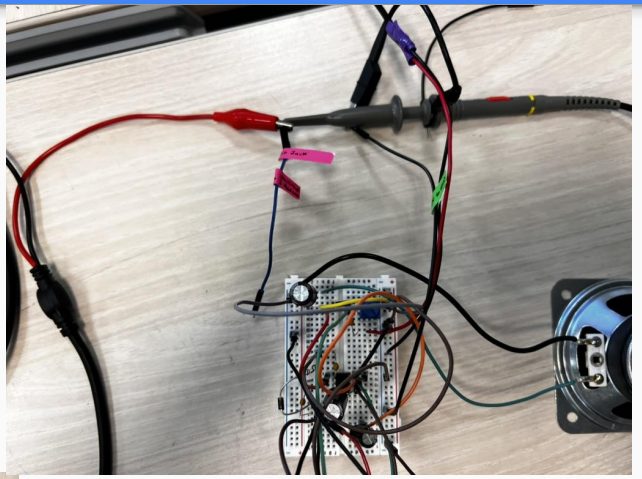
Schematic of Audio Amplifier Circuit

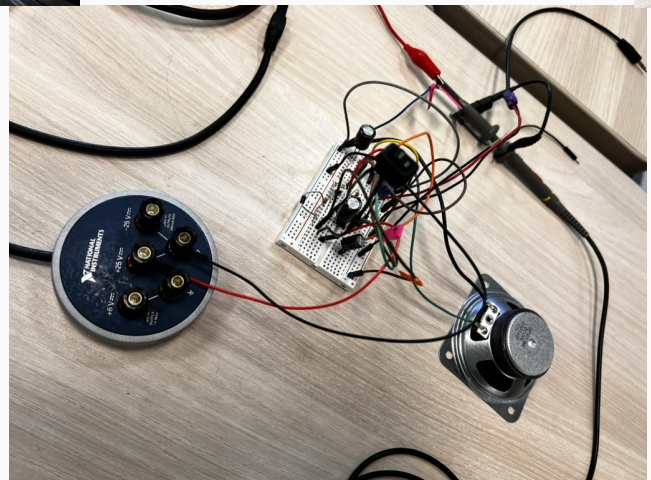




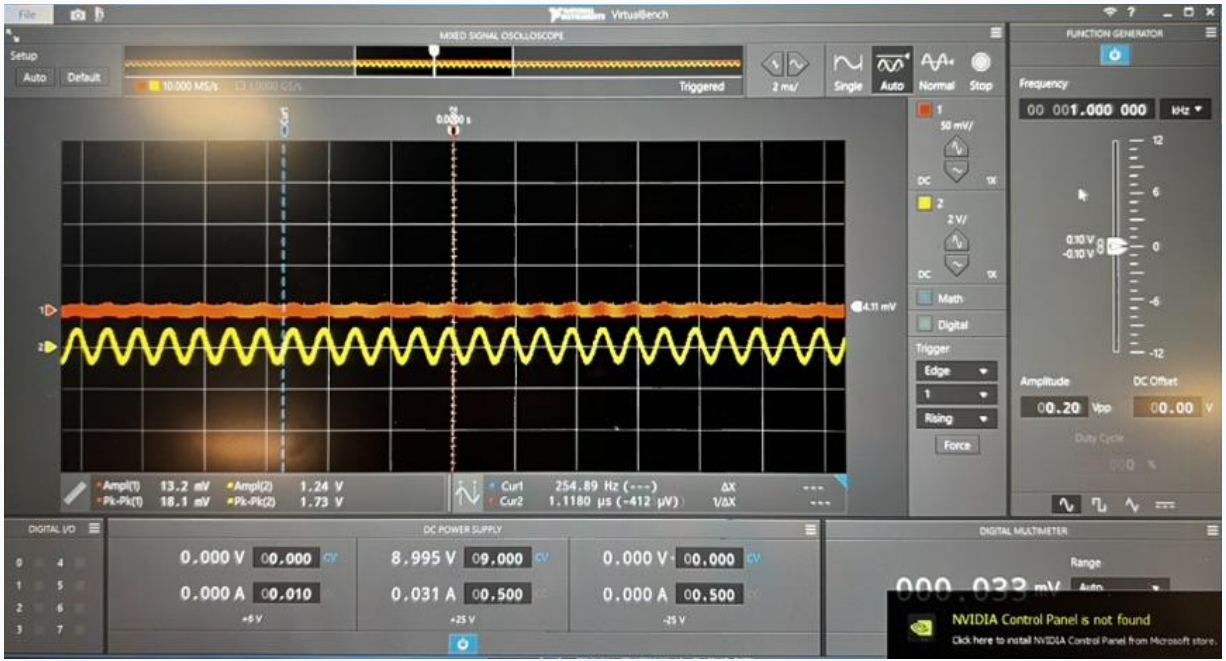
Show picture of your **soldered** audio-jack, switch and speaker with the breadboarded circuit connected to the virtual bench for testing (function generator with o-scope channel 1 used as your audio input and o-scope channel 2 connected to your audio output)



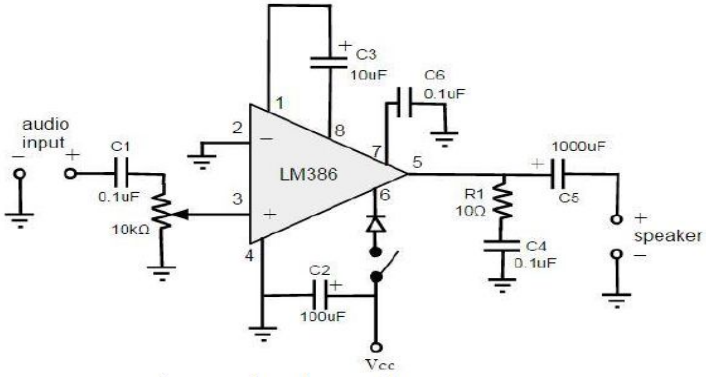




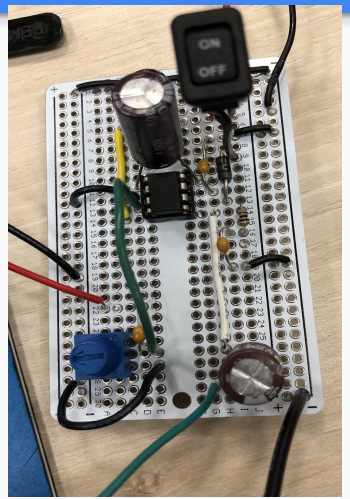
Show a screenshot of your virtual bench interface screen illustrating your (time domain) signals input (ch1) and output (ch2) **for when your new soldered items are attached.**



Challenge #3c - Audio Amplifier (Fully Soldered)



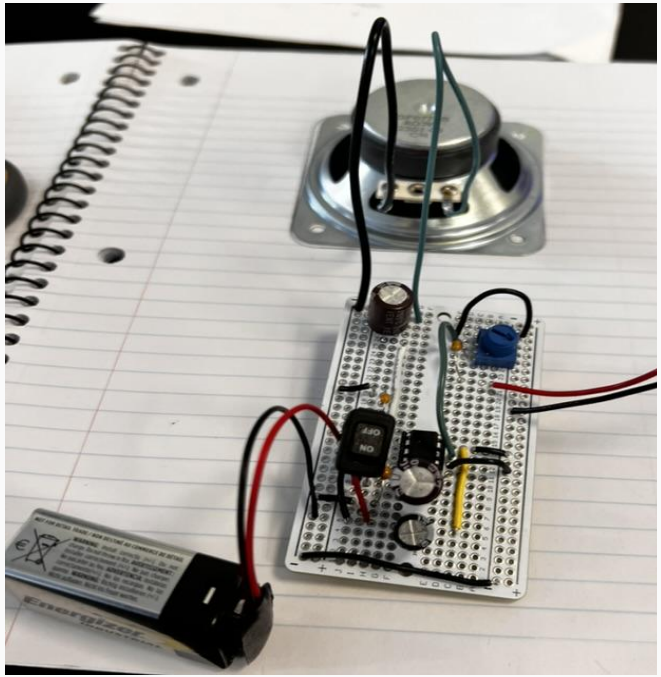
Schematic of Audio Amplifier Circuit



Our speaker circuit is connected by a series of wires, capacitors, and resistors to help control and power the speaker. The speaker is also connected to an audio jack, a battery, and a switch to power on/off. The first time we tested the speaker it wasn't working properly. The audio was being cut off every time we lowered/increased the volume. The result of this was a missing ground wire in the circuit. One simple wire missing disrupted the speaker's ability to function well.

Video with picture

https://youtu.be/Kh5A0weLFag



Lab 2 Equipment and Experience

The purpose for the multimeter is to measure the voltages and currents. It can also test if an electronic device or appliance works. The power supply's purpose is to power up an electronic device with a controlled voltage output. The purpose of an oscilloscope is to read signals and let us see their waveforms. The purpose of a function generator is the ability to give power to our speaker.

I felt that this lab helped both my teammate and I on how to work as a team to create a usable adjustable speaker. A follow up project I can see myself doing would be a LED light show with a speaker built into it.