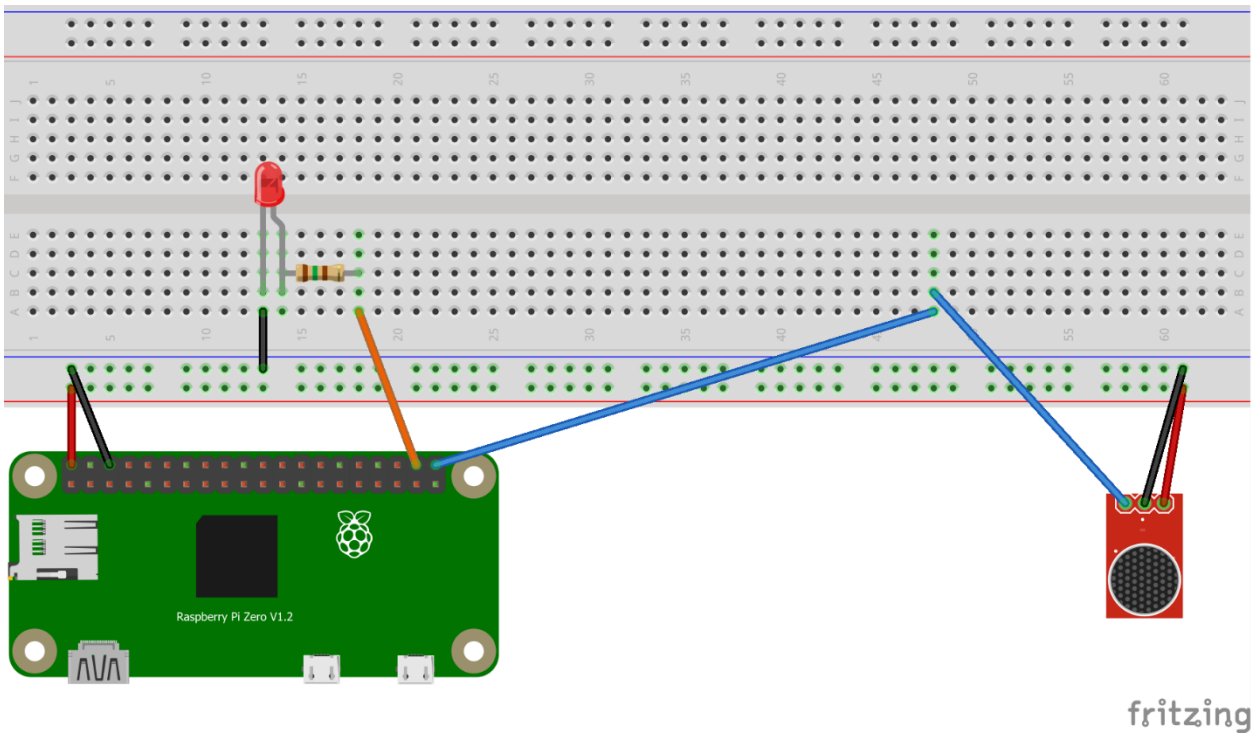
Clap Sensor

I. Description

This project was inspired by the old school clap detection sensors commercials. The idea is that a sound sensor/microphone detects a higher intensity sound that the ambient sounds and switches a light. In place of the light bulb I used a simple LED as a proof of concept and the whole logic is handled by a Raspberry Pi.

II. Schematic



III. Hardware Components

A. Raspberry Pi Zero WH
   1. https://peppe8o.com/raspberry-pi-zero-wh-datasheet/

B. Sound Sensor Module LM393
   1. https://www.optimusdigital.ro/ro/senzori-altele/108-modul-senzor-sunet.html

C. 1 Red LED

D. 1 150Ω resistance
E. 1 Bread Board
F. 7 input-output cables
G. 1 input-input cable

IV. Software Components
A. NOOBS OS
1. https://www.raspberrypi.com/news/introducing-noobs/
B. Python
1. https://www.python.org/
C. RPi GPIO library
1. https://pypi.org/project/RPi.GPIO/

V. Setup
A. Find the optimal sensitivity for the sound sensor module
B. Wire all the components together according to the schematic
C. Connect the Raspberry Pi to a power source

VI. Running
A. Run the python script
B. Clap/snap your fingers/tap on a surface
C. The LED will turn on when the sound sensor detects any kind of sound above the set threshold

VII. GitHub repository
A. https://github.com/GamaCatalin/ClapSensor_RaspberryPi