

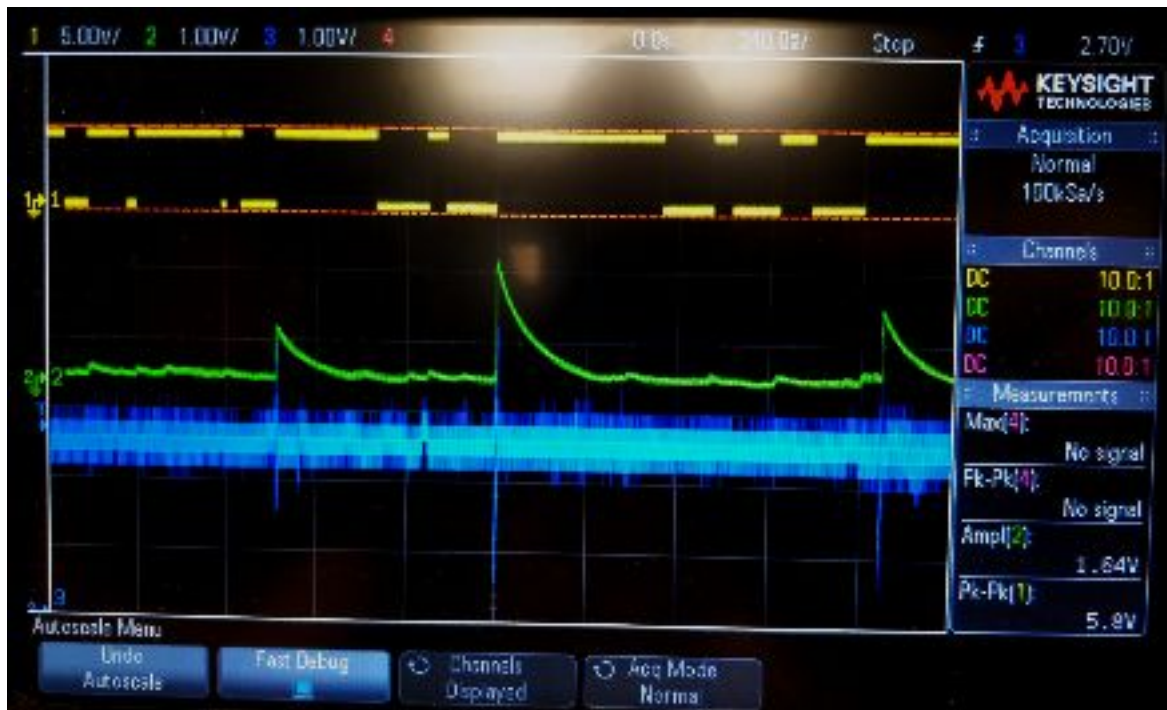
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ECE 140a Lab 2 Writeup

Sound Sensor:

Once you connect the sensor, read the different values: Gate, Envelope, and Audio. Use the Oscilloscope and **include a picture in your lab report.**

Envelope (Channel 1 / Yellow) , Gate (Channel 2 / Green) , Audio (Channel 3 / Blue)

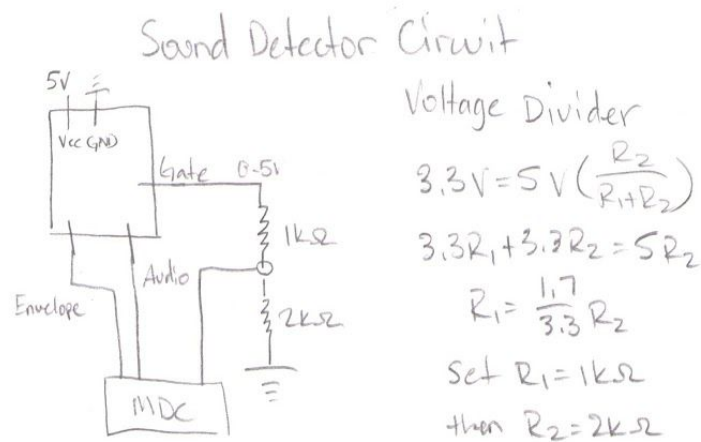


What is the range of these values? The range of these values is between 0 - 5 V.

Are they what you expect? Yes, the values are expected since the sensor is powered by the 5 V rail.

Are they correct? No, when connecting the sensor to the Pi, we will be using the MCP. The values that the MCP will give the Pi will differ from those on the oscilloscope.

Submit a circuit diagram with your solved circuit.



Redo the measurements with your modified circuit. Include a picture in your lab report that contains:

Output of Audio Pin at 5V (Channel 1 / Yellow) , Input of Audio signal to MCP3008 at 3.3 V (Channel 2 / Green)



Output of audio vs input of audio signal to MCP3008

Clapper Circuit

Design a simple circuit that toggles an LED on and off:

Our code:

```
import RPi.GPIO as GPIO
import time
import SmartSound

ledpin = 27
ledstate = 0
env_th = 80

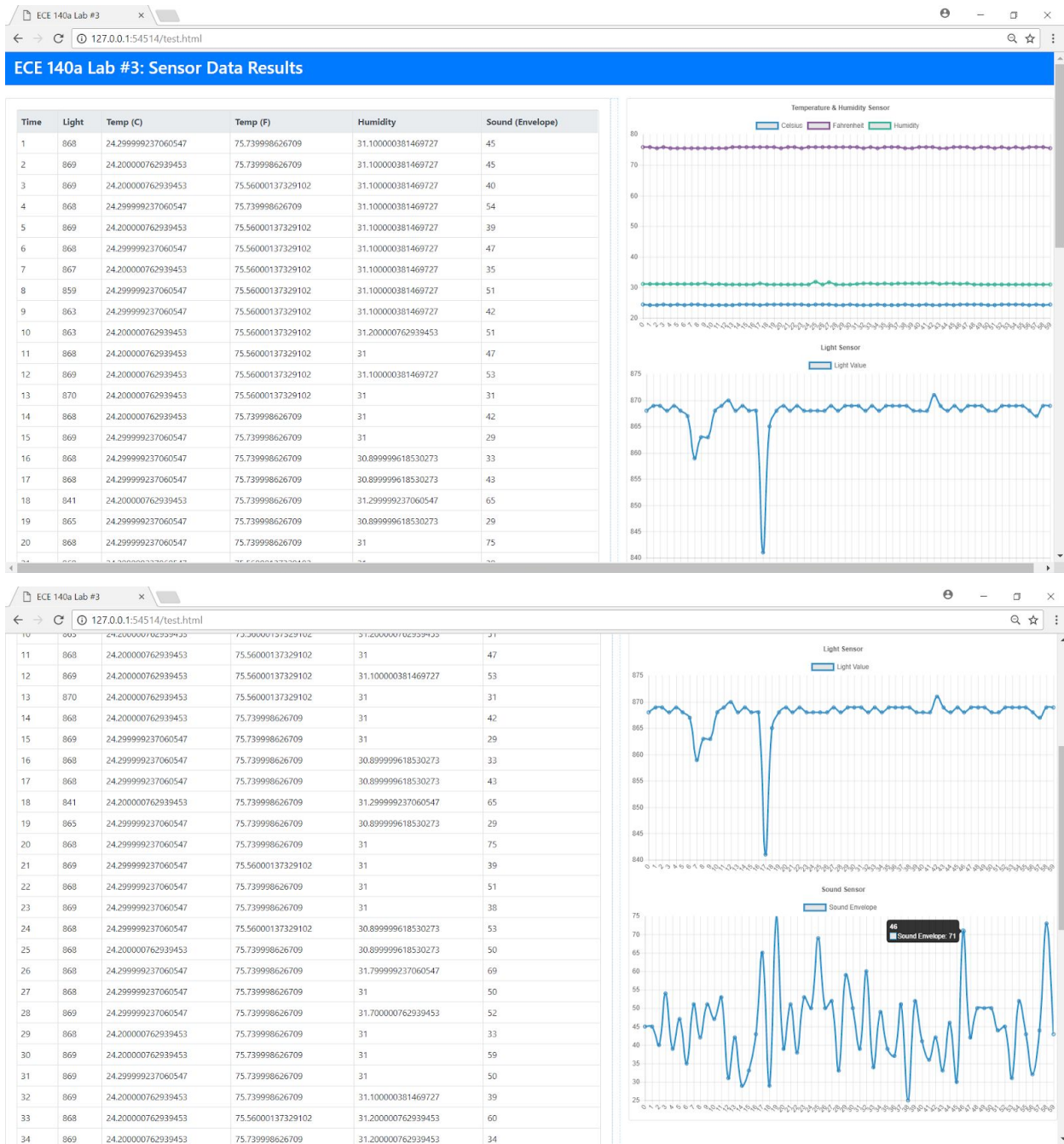
GPIO.setmode(GPIO.BCM)
GPIO.setwarnings(False)
GPIO.setup(ledpin, GPIO.OUT)

SS = SmartSound.SmartSound()

while True:
    envelopeVal = SS.get_envelope()
    print envelopeVal

    if (envelopeVal > env_th and ledstate == 1):
        print "LED off"
        GPIO.output(ledpin, GPIO.LOW)
        ledstate = 0
        time.sleep(0.2)
    elif (envelopeVal > env_th and ledstate == 0):
        print "LED on"
        GPIO.output(ledpin, GPIO.HIGH)
        ledstate = 1
        time.sleep(0.2)
        time.sleep(0.1)
```

Front End



UPDATED

