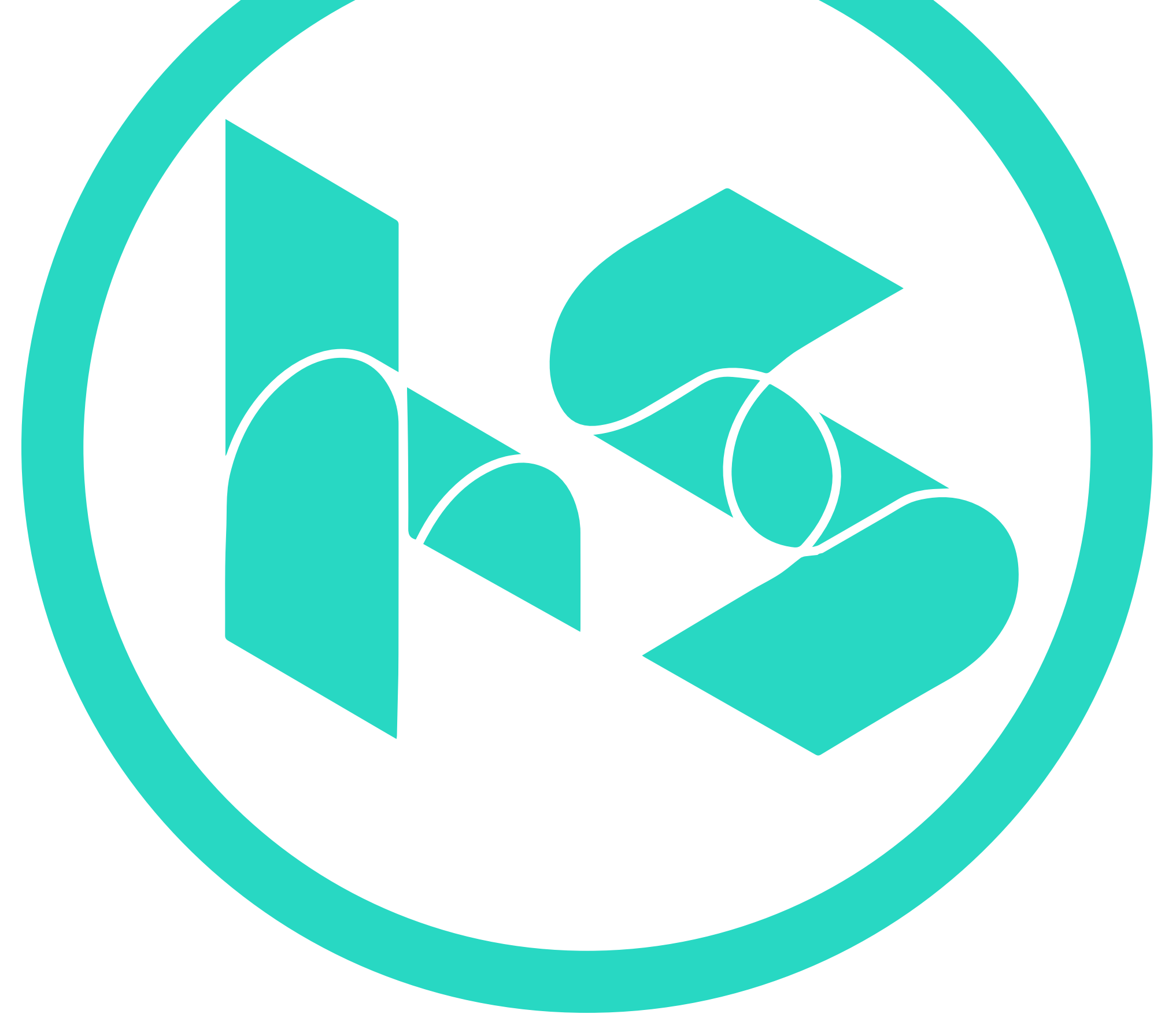
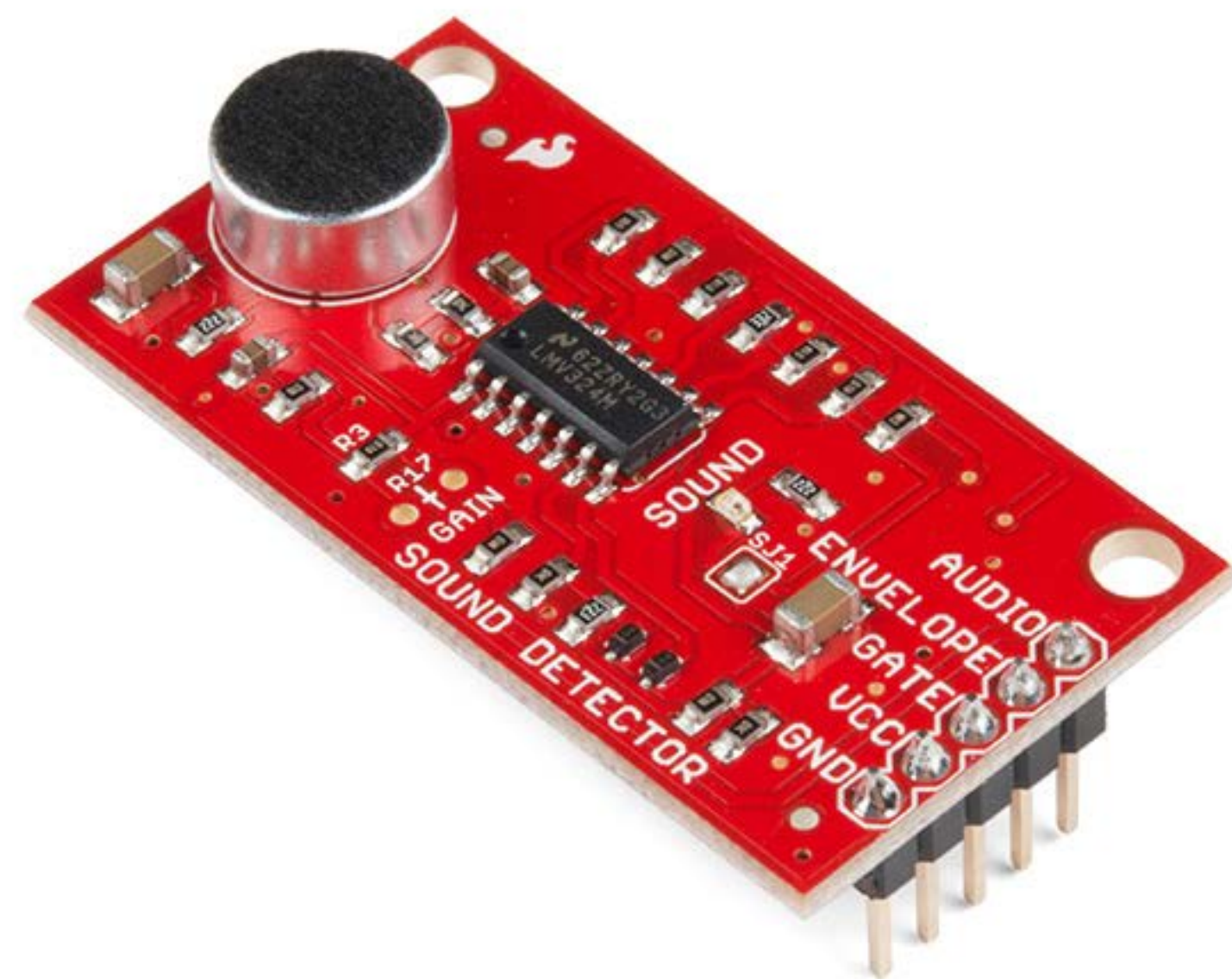


HOW TO USE A Sound Detector

Sparkfun



DOCUMENTATION

WHAT IT IS?

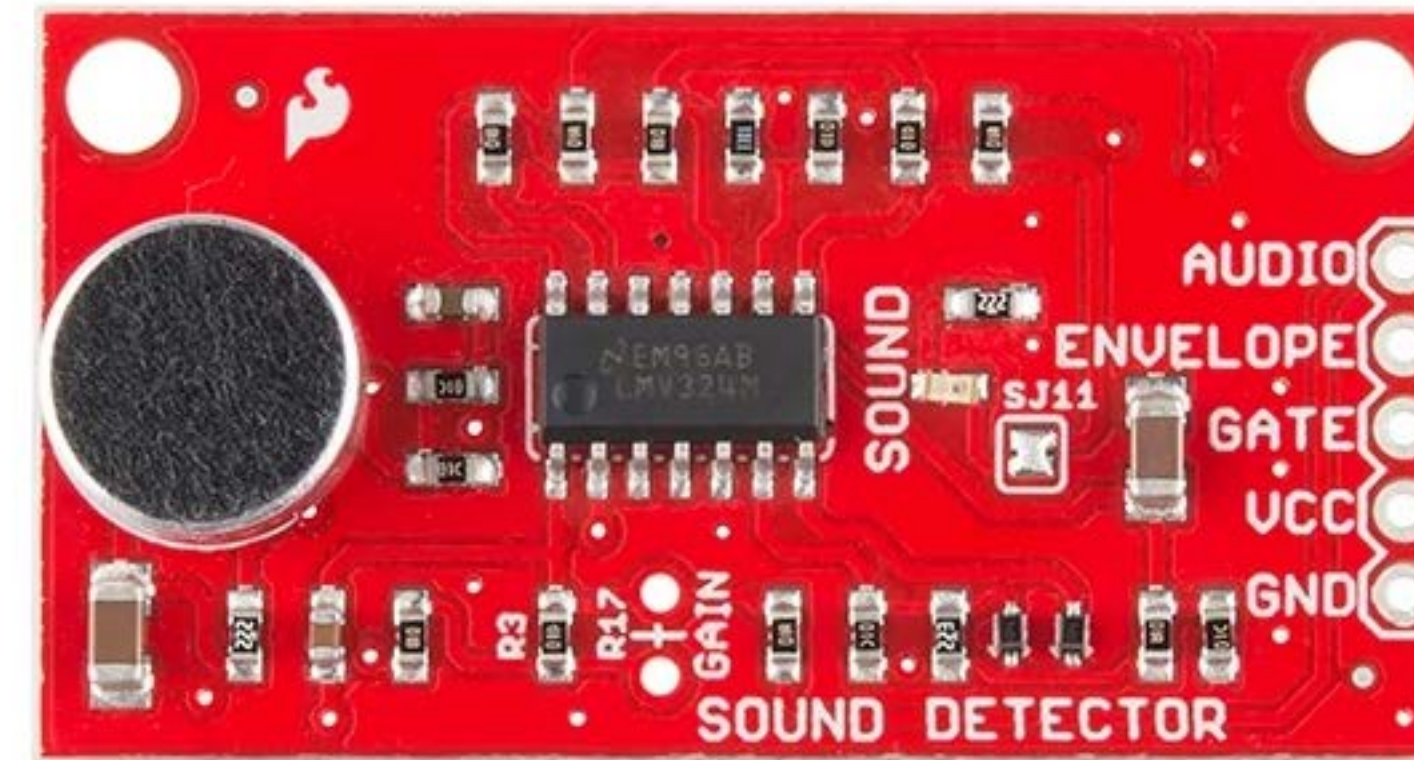
The SparkFun Sound Detector is a microphone-based sensor that detects the presence and level of sound in the environment.

It's **NOT** a **sound recorder**—it only measures sound intensity (volume) and provides a corresponding signal.

Commonly used in noise-activated projects, audio-triggered events, and sound-reactive lights.

MORE INFO:

<https://learn.sparkfun.com/tutorials/sound-detector-hookup-guide#reso>



FRONT



BACK

DOCUMENTATION

HOW IT WORKS?

There are three connections on the board:

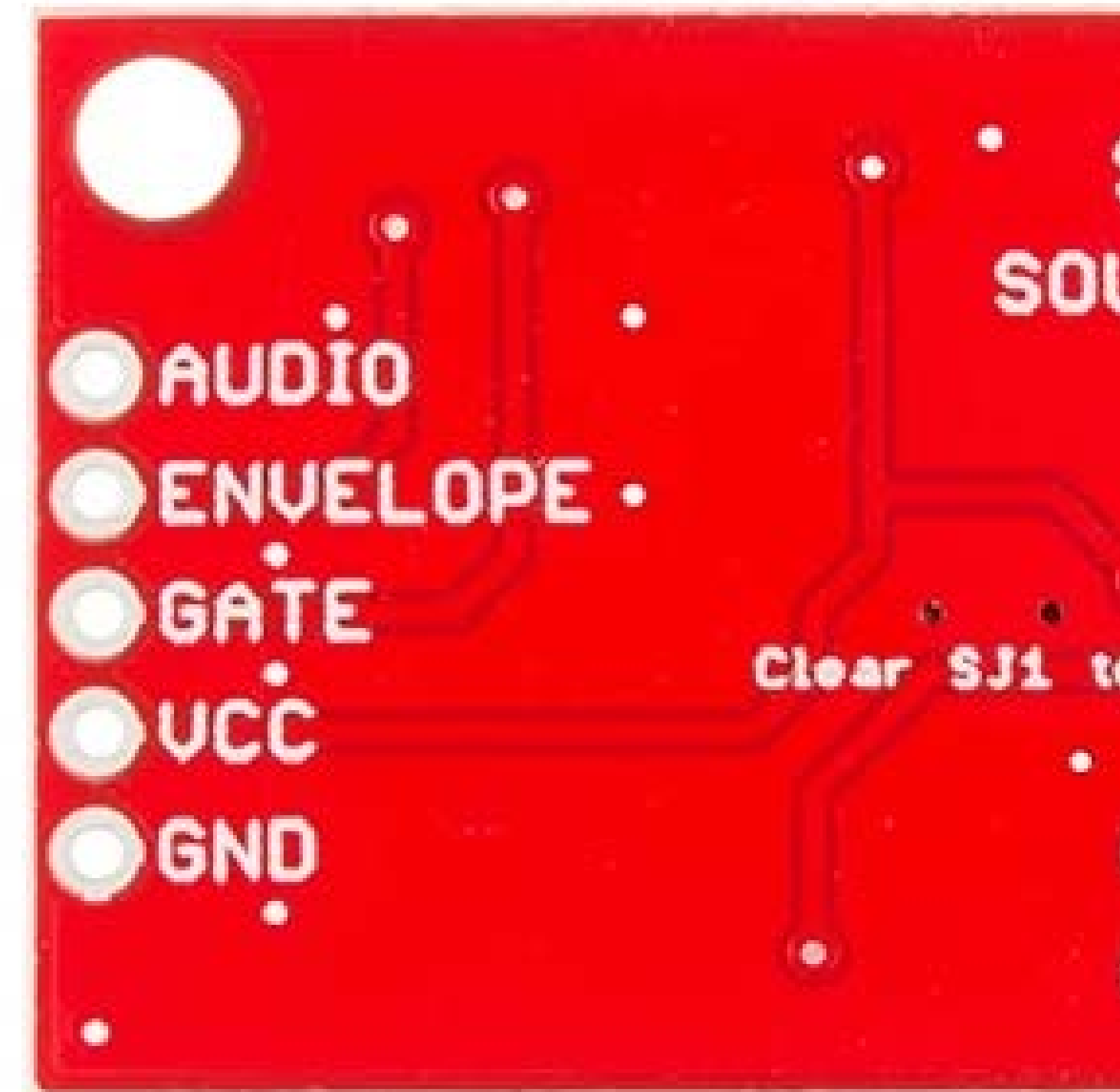
Audio - This is the raw audio from the microphone.

Envelope - This is a ANALOG value representing the volume of the ambient sound.

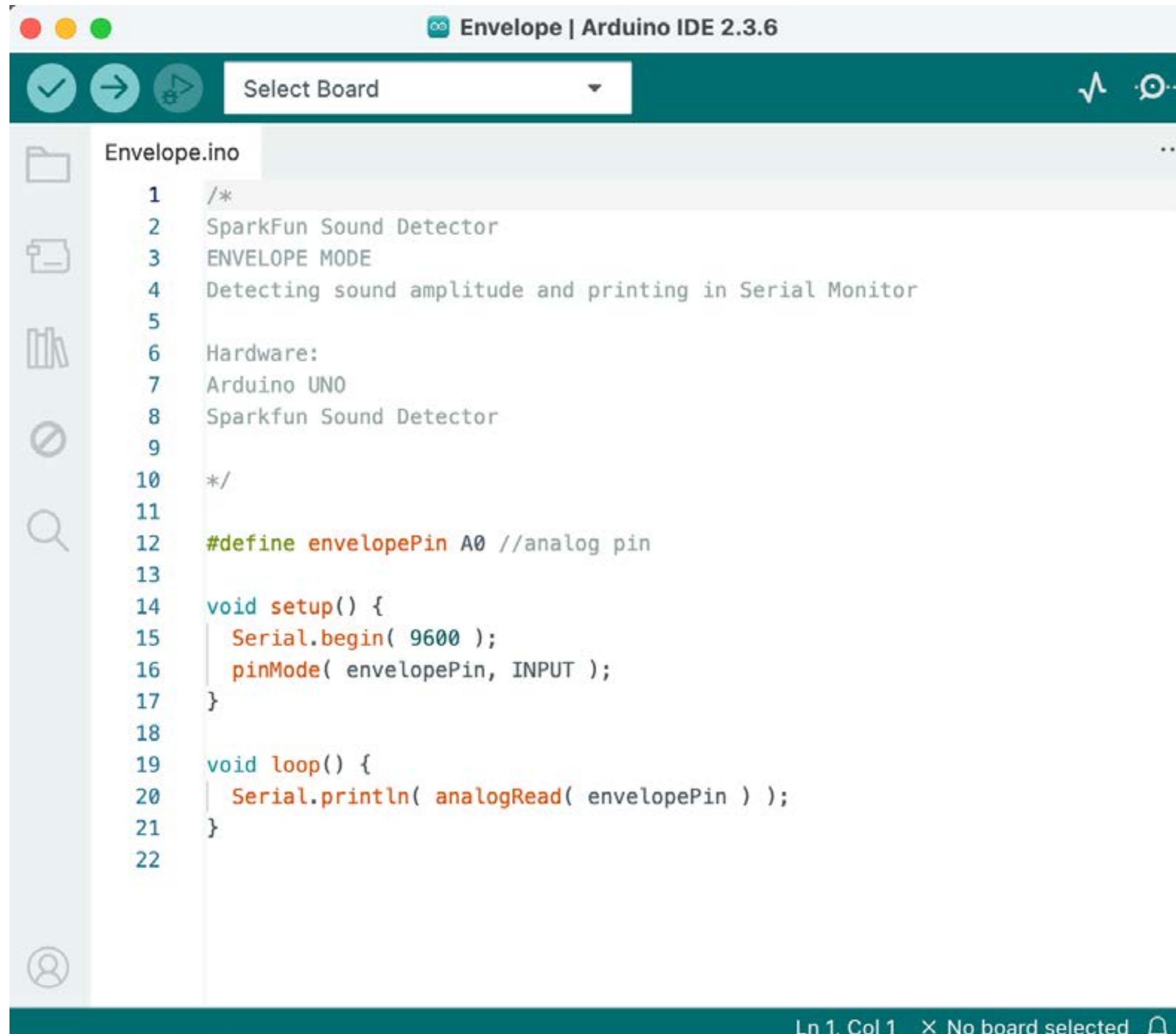
This analog signal allow us to monitor sound amplitude.

Gate - This is a DIGITAL value that indicates whether the sound level is above or below a certain threshold.

In other words, it works like an on/off switch to detect sound vs. no sound.

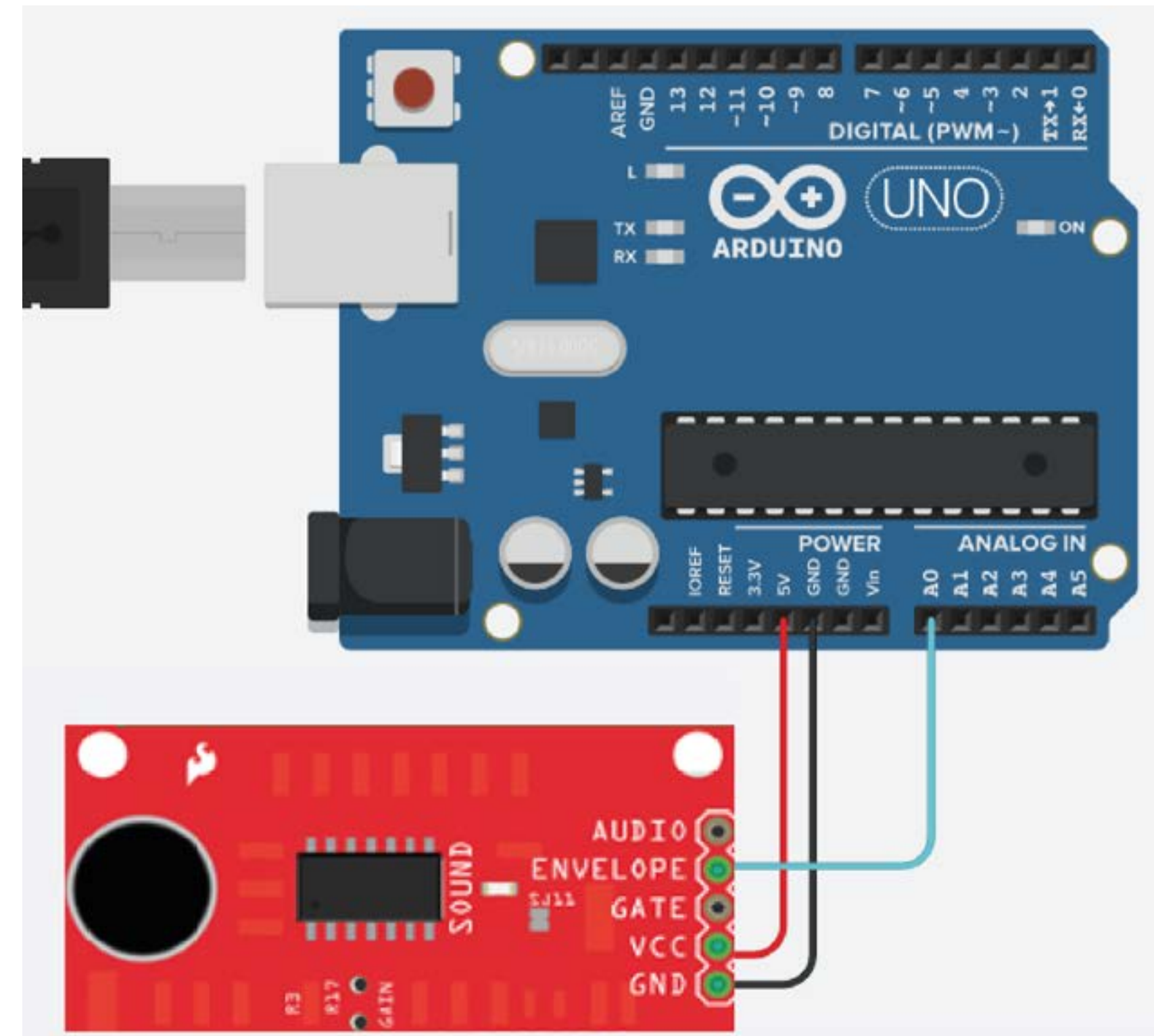


ENVELOPE



```
Envelope.ino
1  /*
2  SparkFun Sound Detector
3  ENVELOPE MODE
4  Detecting sound amplitude and printing in Serial Monitor
5
6  Hardware:
7  Arduino UNO
8  Sparkfun Sound Detector
9
10 */
11
12 #define envelopePin A0 //analog pin
13
14 void setup() {
15   Serial.begin( 9600 );
16   pinMode( envelopePin, INPUT );
17 }
18
19 void loop() {
20   Serial.println( analogRead( envelopePin ) );
21 }
22
```

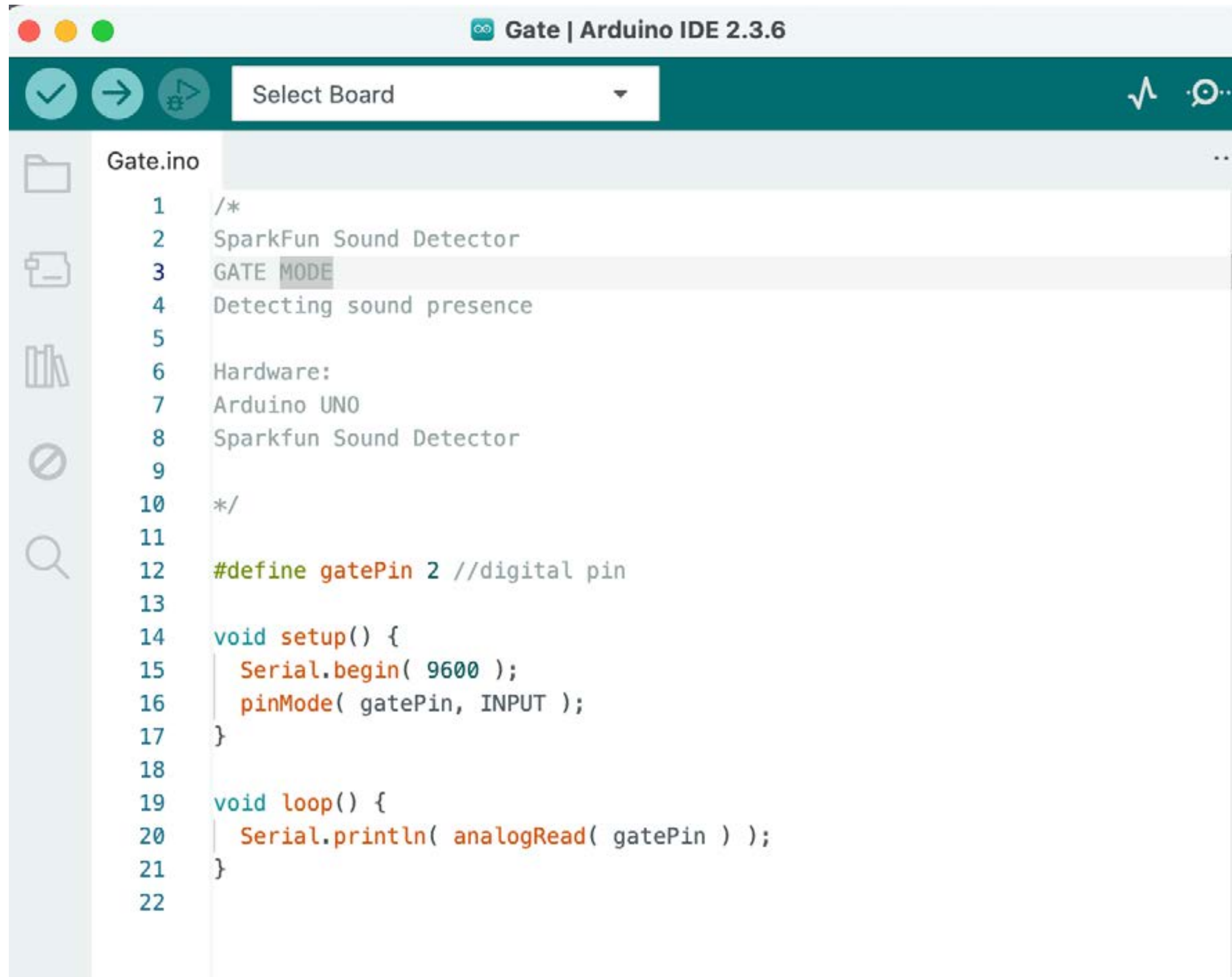
Ln 1, Col 1 × No board selected



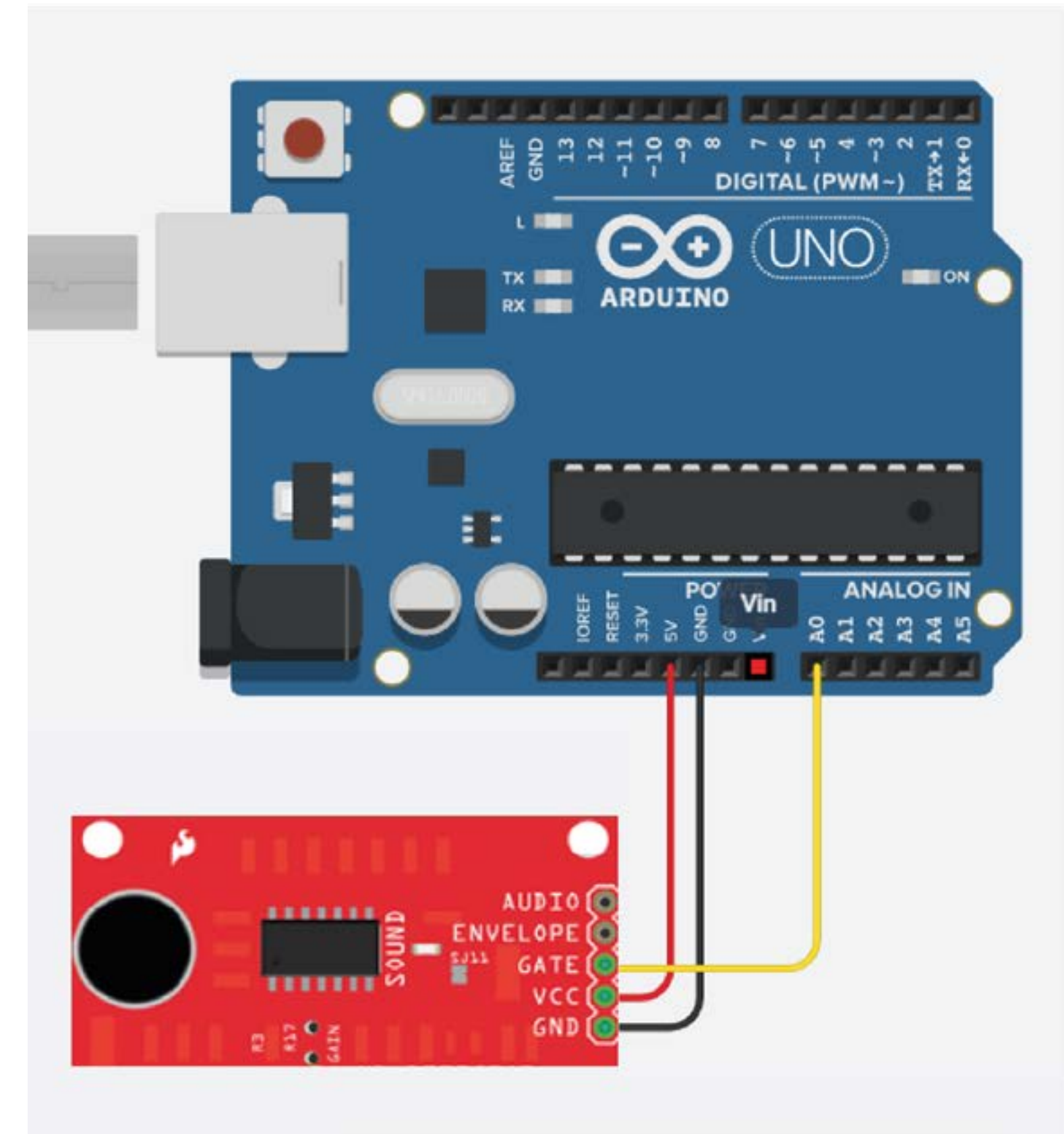
INSTRUCTIONS:

Build this code, upload it to your Arduino Board, and open the Serial Monitor. What data do you see printed?

GATE



```
Gate.ino
1  /*
2  SparkFun Sound Detector
3  GATE MODE
4  Detecting sound presence
5
6  Hardware:
7  Arduino UNO
8  Sparkfun Sound Detector
9
10 */
11
12 #define gatePin 2 //digital pin
13
14 void setup() {
15   Serial.begin( 9600 );
16   pinMode( gatePin, INPUT );
17 }
18
19 void loop() {
20   Serial.println( analogRead( gatePin ) );
21 }
22
```



INSTRUCTIONS:

- Look carefully at this new code. It is very similar to the previous one, but key elements have changed.
- Re-wire your Sound Detector – this time, connect the Gate pin instead of the Envelope pin.
- What do you observe now in the Serial Monitor?

OTHER TUTORIALS

<https://learn.sparkfun.com/tutorials/sound-detector-hookup-guide#reso>

<https://learn.sparkfun.com/tutorials/sik-experiment-guide-for-the-arduino-101genuino-101-board/experiment-15-using-the-sound-detector-board>

<https://maker.pro/arduino/projects/sound-detector>

<https://wiki.cci.arts.ac.uk/books/how-to-guides/page/using-a-sparkfun-sound-detector>