

MIDI's not dead!



(And other musical ways to use JS)



Who are you anyways?

- Dev 🥑 @ Cloudflare
- IoT author (JS on hardware)
- Self-taught EE major
- Agender (yes I know that's hard en Français)
- Budding musician

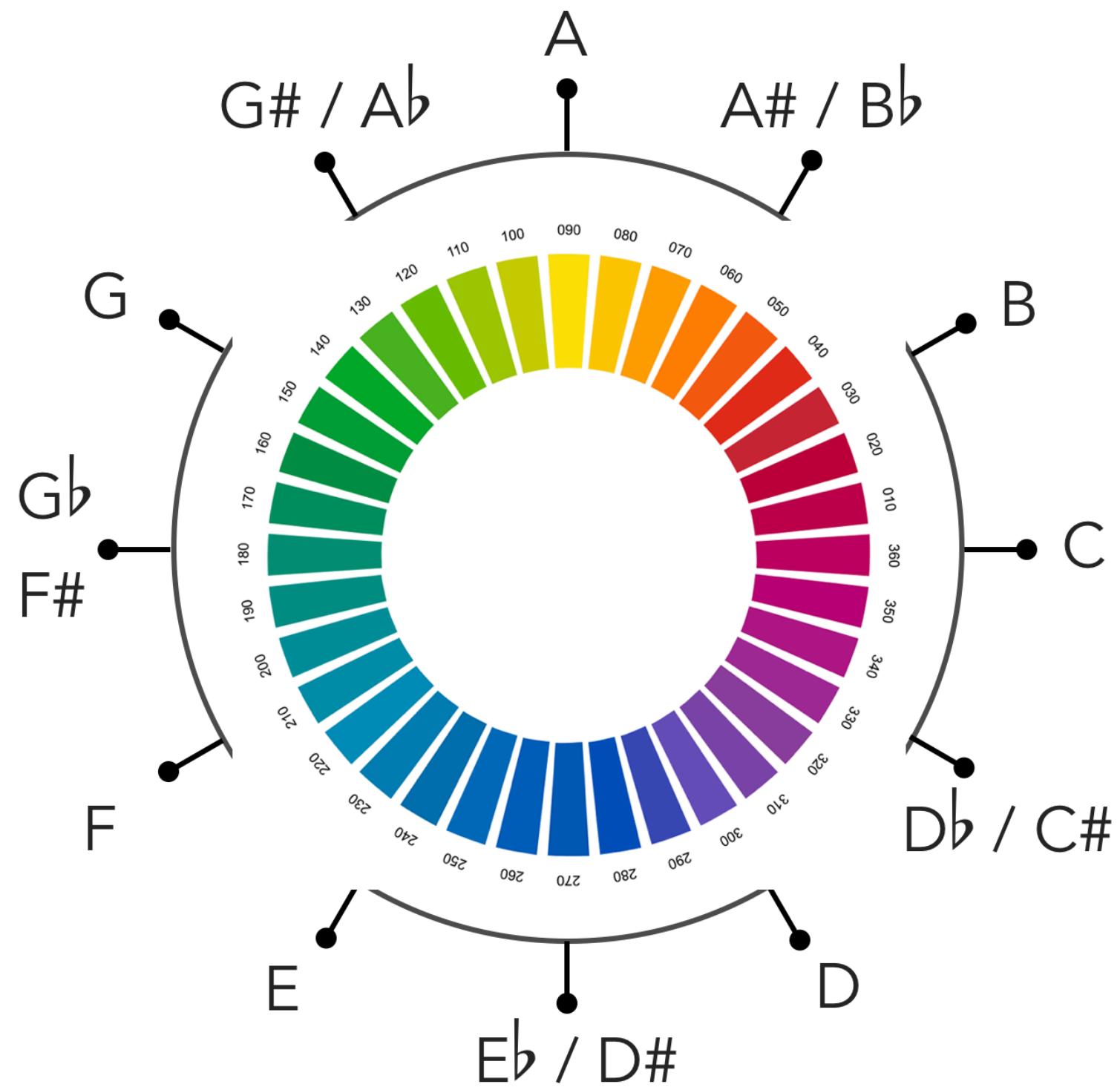
Building a JS Band

The Bass

A lesson in MIDI, music theory, and
project complexity

What I Wanted

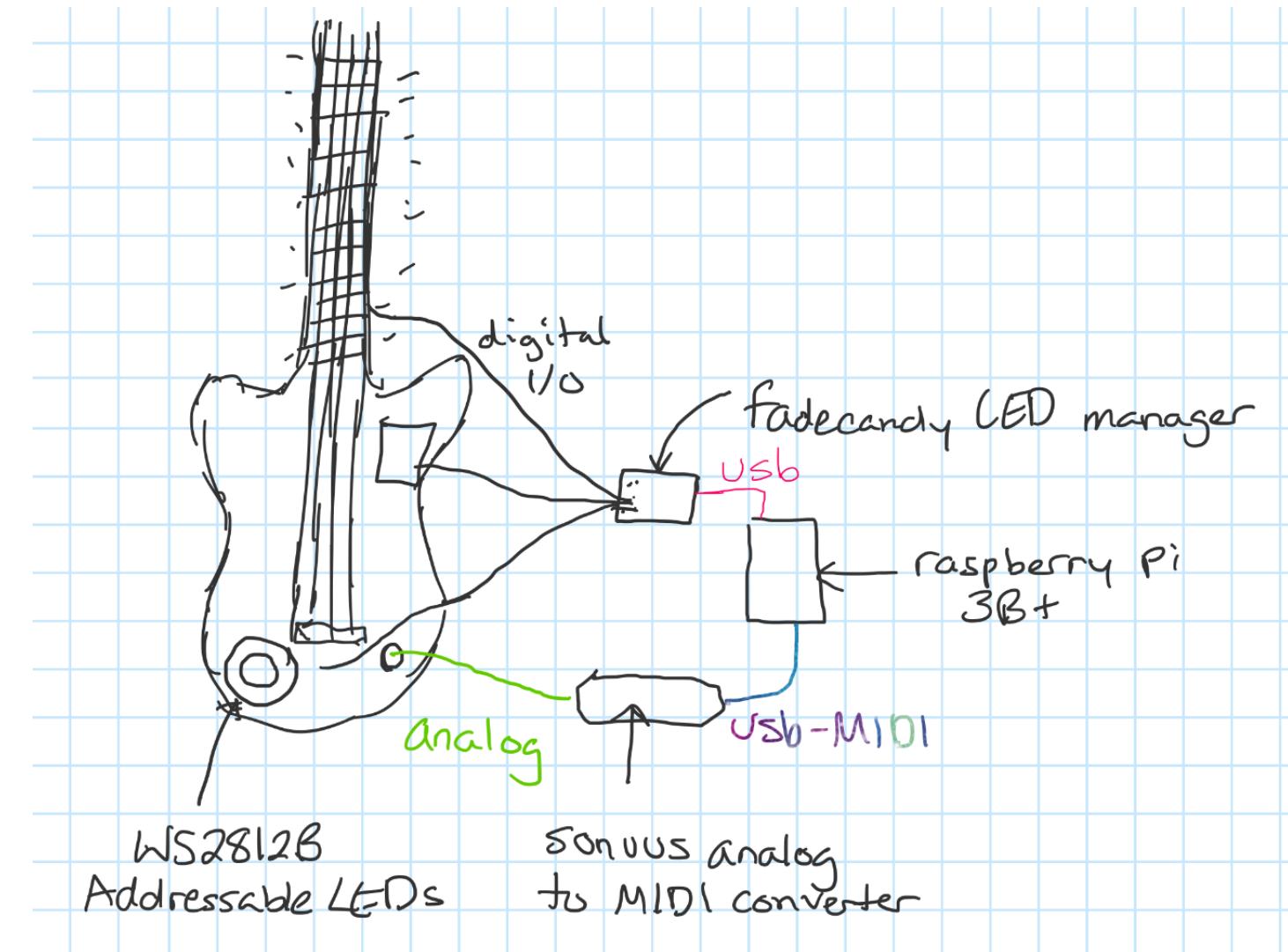
I wanted my bass to light up in a way that had something to do with what was being played.



What it is

- Lights up rainbow when silent
- Uses hue/note wheel to light up the color of the note being played

What it Looks Like



How it Works

1. Analog sound comes out of the bass and into an A/B/Y switch
2. One fork goes to Sonuus MIDI converter
3. Sonuus data goes into Node script that determines hue of note
4. Node script tells Fadecandy what color to set the lights

How the Software Works

- npm install midi tonal color
- Install fadecandy server (fcserver)
- midi takes the MIDI data from converter, tonal tells me what note
- use color and HSV algorithm to get the hue
- Send OBS data to fcserver to light it up

Short Demonstration

Still some limitations

- Sonuus converter is monotone (no chords)
- Electrical noise is a thing!
- I'm no professional bassist!

The Messaging System



Because bandmates have to talk to each
other

My Communications System

- Node WebSocket server
- Receives & broadcasts messages to/from instruments
- I named it Maestro

How it Works

- Takes in messages from connected clients (instruments)
- Broadcasts messages to clients

The Controller



Because typing and playing bass don't
mix

What it is

- Ableton Launchpad MK2
- LOTS of buttons
- RGB LEDs
- plays MP3s on queue
- sends messages to the communications system

How it Works

- Fork of the Ableton-MK2 library for button events/lighting
- node-mp3-player for MP3 sounds
- ws to connect to Maestro and send events

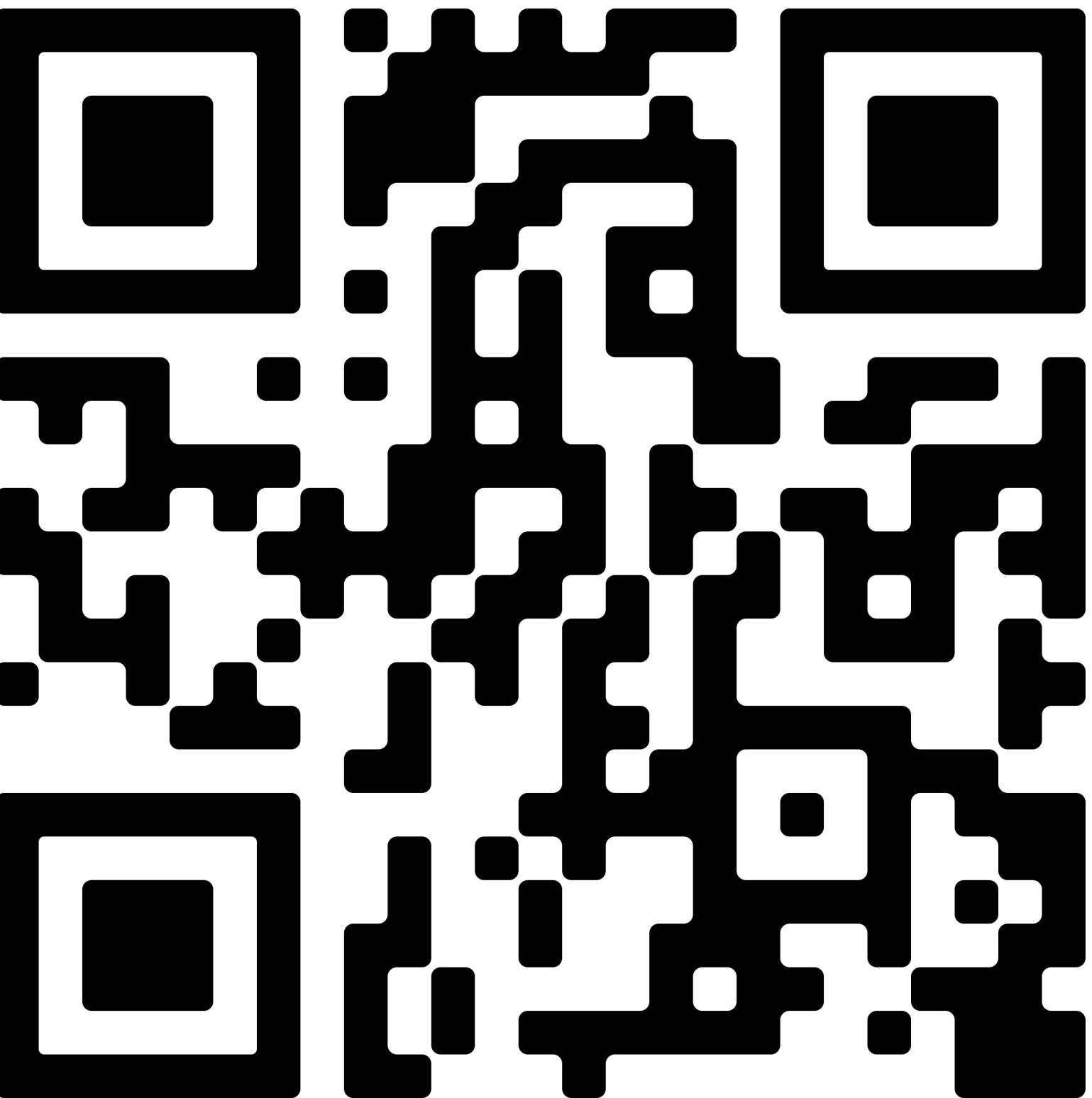
The Melody/Drum Player

Because a bass does not a band make

What it is

- Tone.JS running in a browser
- Websocket connection to Maestro
- GIFs
- Plays the melody and drum parts (with a cue)

Let's Play a Song



How that worked

- Pressing a button on the controller sent 'PlaySong' to Maestro
- Maestro broadcasted 'StartSong'
- All instruments now know the song is cued
- Melody player started cue, followed by song
- I played along, and lights did their thing

What's the Point?

Node is Ten Years Old



And look what we can do with it.

Thanks for listening

