SwarmPlayer Kikof

SwarmPlayer is a wild demo. The audience is asked to join to our WiFi hotspot, then a web app automatically starts. The server organizes the mobile devices to a music player swarm, they will play songs and real-time MIDI performed live on the stage.

Functional specification

- A central machine emits MIDI (-like) data
- The clients (smartphones, notebooks with WiFi) are web apps, join to our own hotspot, with captive portal.
- The central machine plays a pre-written music, but MIDI keyboard and Wind Controller can be also used.
- The clients do not play all notes, the server decides which notes to play on which client.
- A dedicated client for voices, which mobile devices can't play, e.g. bass, drum.

Technical issues

- I made captive portal on ESP8266, but for 50-100 clients, we need a different solution.
- Time sync is needed between server and clients. Or maybe not, depends on the speed of the network, MIDI data is small.
- I think, websockets is the appropiate solution, needs implement server side.
- Needs a concept for displatching notes, which handles suddenly disappearing and appearing clients.
- Before the party, it needs to be tested, at least with 20-25 clients.
- I want to write the server in Rust.
- Needs to plan the show script, e.g. it would start with a unisono buzzer song, then switch to multitimbral song, finally, the audience should play on the MIDI keyboard, while I play on the wind controller.

Features NOT to implement

- Asking the audience to show their phones to a camera, so stereo positions could be calibrated.
- The clients will be passive, play-only, no input is accepted.

Investigation

First, I'll make a PoC, the central machine will send something to as many clients as I can collect, just to know if time sync is required.