# FMP2

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FM Synthesizer Sequencer

Main idea

- Develop a FM Synth, a sequencer and an effects chain

- In every step the oscillator section is fully editable

- Use of HTML, CSS, JavaScript and Model Control View pattern

- Instant view on step's status with respect to others through colors and visual effects

- Run on every common Browser

What is a FM Synth

- Composed of two oscillators
  - The first is a carrier
  - The second modulates the first through frequency modulation

- Though very simple in its shape allows for many more sounds with respect to a traditional subtractive Synth

Controls - Oscillator

- Oscillator
- Frequency
  - Quantize switch
- Shape
- Modulator shape and amount
- Harmonicity
- LFO amount and frequency
- Attack and Release
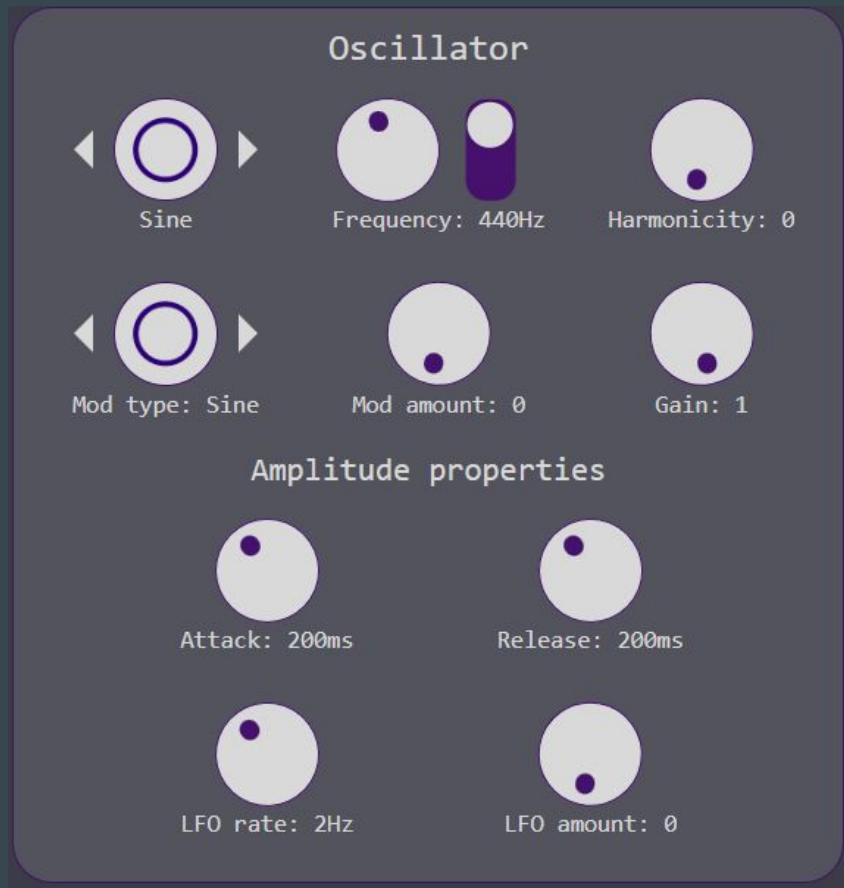
Controls - Effects section

- Wave Folder: amount
- Distortion:
  - Amount
  - Dry/Wet
- Flanger
  - Wave type
  - Rate
  - Depth
  - Width
  - Feedback
  - Dry/Wet
  - Color (distortion)
  - Stereo

Controls - Beat track

Kick

Frequency: 50Hz

Gain: 0

Release: 1000ms

Pitch rel: 300ms

Sweep: 100

Panning: 0

Snare

Frecuency: 180Hz

Gain: 0

Release: 300ms

Color: 3

Sweep: 100

Panning: 0

Hi-hat

Cutoff: 3000

Gain: 0

Release: 100

Panning: 0

Tom

Frequency: 150hz
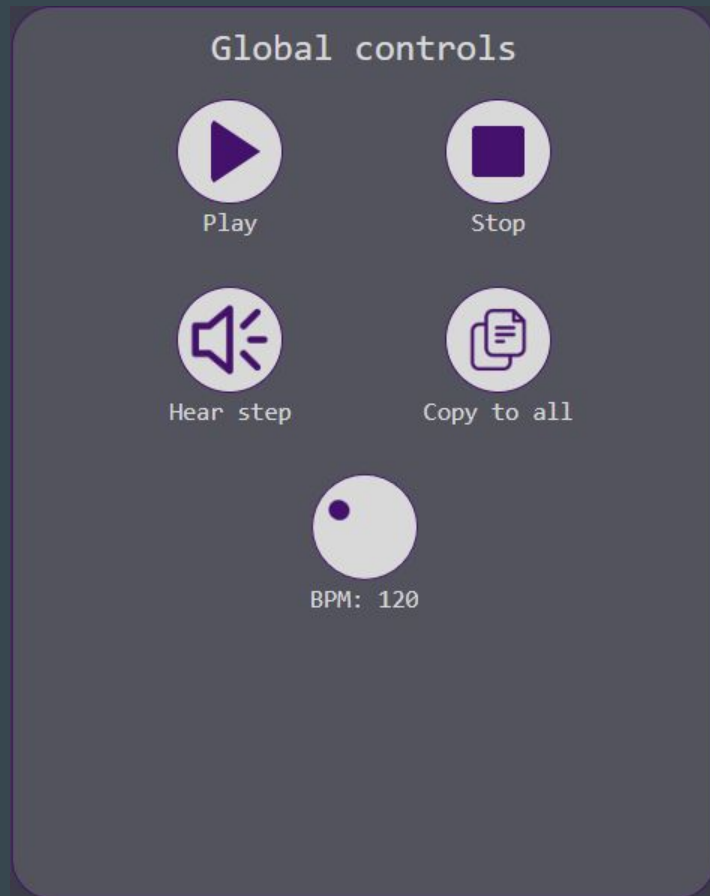
Gain: 0

Release: 400

Color: 0,5

Panning: 0

Controls - Globals

- Play
- Stop
- Copy
- Hear Step
- BPM

Controls - Sequencer Bars

- Each bar is a chanel
  - Channel 1: Melody
  - Channel 2: Rhythm

Aborted Features

- Filter section;
  - was supposed to have selectable filter types and LFO modulating it
  - was fully functional, but had some issues regarding performances and sound
- Two additional channels
  - we decided to keep the project very simple to obtain maximum performances without compromising versatility

Future implementations

- Collaborative live use
- Re-introduction of filter
- Adding functionalities to already present features
- Possibility to save status and songs
- Drag and drop copy of selected step
- Standalone effects section as plugin for DAWs
- MIDI controllable

Thank you for your attention