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Pitched Music Sequencer

All relevant code is located in /assets/js/components/sequencer.js

The music sequencer consists of 5 parts:

1. List of scaled intervals, or musical scales
2. Sorted list of available notes by frequency
3. Tone sequencer
4. Interval creator
5. Graphical Sequencer

List of scaled intervals

Ratios of scales are developed using a 12-point circular clock representation for selection of the various scales. I add these ratios as values of 0-12 and use these values as indices to apply to the sorted array of notes.

Sorted list of available notes sorted by frequency

A list of all available notes that can be used to calculate scales with the above ratios. The selected ratios can also slide back and forth through the array to raise and lower the pitch.

Tone sequencer

A Tone sequencer runs using Tone.js. This provides an abstraction for timing each beat at the computed intervals. The Transport() method functions as a global timer.

Interval creator

This method, setInterval(), calculates intervals to apply beats in time, and uses loops to apply these beats at different intervals. A row, starting index, and interval are passed into the function, and beats are applied at that interval throughout the entire sequence for the selected pitch. Different intervals can be applied for varying effects.

Graphical Sequencer

A graphical interface of 60 beats and 7 pitches is provided to the user in a form of a grid, where the rows are the pitch of the scale, and the columns represent time, or each beat in the 60-loop sequence. User can interact with notes to apply different melodies in synchronization with beat. Each row provides a different pitch of the scale, some in different synths instruments, since the low pitches are instrumented differently the than high pitches. Then the user can select different scales to apply and change the overall pitch of the scales using dropdowns. A randomize function is provided as well to randomize all pitches at even intervals.