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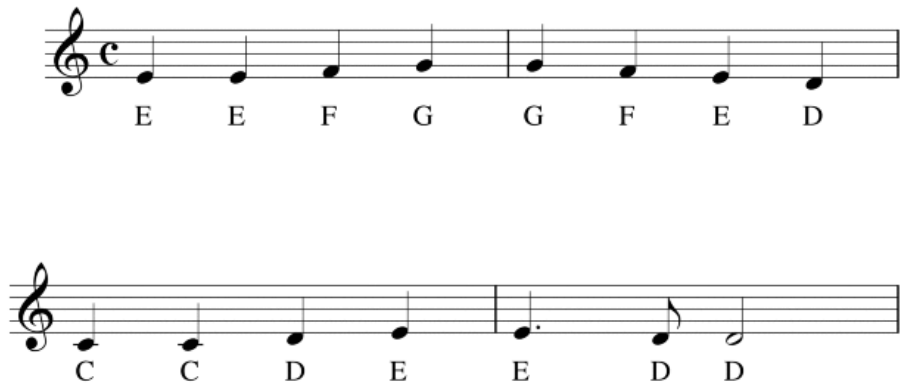
Project Proposal
Due: Apr 30th, 2019
Portland State
CS510: Computers, Sound and Music
Professor: Bart Massey

1 Project proposal

A music sequencer can play notes to a rhythm. Sequencer data can include rests and notes of different lengths. Sequencers can also play multiple notes at once.
I want to build a virtual sequencer. This project would be similar to existing ones, like this one found online (https://onlinesequencer.net). The improvement my sequencer would have over existing sequencers, is that it would use a simple, condensed notation to represent songs.
The ultimate goal of this notation is to be a terse programming language for songs.
A naive set of symbols used for a minimalistic notation would be to use 'a' through 'g' to play notes and '1' through '8' to change the length of next notes played.
The notation is interpreted serially.
To illustrate this notation, here's the sheet music for the first 4 bars of "Ode to Joy."



Here's how it would be represented in my notation. Each bar is spaced apart for readability. Also, there's an extra '.' syntax to create dotted notes.

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4eefg gfed ccde 4.e8d2d
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I want to include more notations to play chords and have rests and maybe somehow having two instruments playing. Playing chords and multiple instruments would make use of a lot of the concepts I've learned in this class as I'll have to mix different signals together to produce the final sound. Also, it will probably involve a lot of music synthesis, which is taught in the second half of this course.

Also, eventually I'd like the language to have the ability to store "functions" that could be called. These would play a specific sequence of notes and would accept arguments to modify the speed, octave and other properties. This may be out of scope for the class project though.
It will probably be coded in Python. I'm not planning on having a lexer, the programming language won't be that complicated. It will mostly focus on blending sounds together.
I'm not sure if this language would be efficient enough to warrant it's terse nature, so this project would be somewhat exploratory/experimental. Let me know if this is acceptible for the class project. Also, if you've heard of anything like this, let me know as well.