Journal Report 9
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Daily Log

Monday November 11

I modified the method that finds all the indices at which the motif appears. Previously, it would look for exact matches, but in cases where the motif might appear in different octaves, this was rendered impossible. Instead, my algorithm now looks for exact matches in a "differences" array.

Tuesday November 12

Previously, my "motif" algorithm found the longest section of music that had one repeat. For arpeggios, however, this is not the best way to parse out an accurate motif. Because of this, I modified the algorithm to detect the section of music that repeats the most regardless of length. However, while this is satisfactory for arpeggios, it fails in pieces like "Can You Feel The Love Tonight." Although it's nice to have multiple ways to find a motif, I can't figure out which method should be used when and how to identify the "optimal motif" that allows fingering to be smoother. I need to either devise a system for my code to evaluate the piece and determine which method works the best, or apply both methods and have some kind of weighting system that ranks the different outputted fingerings.

Thursday November 14

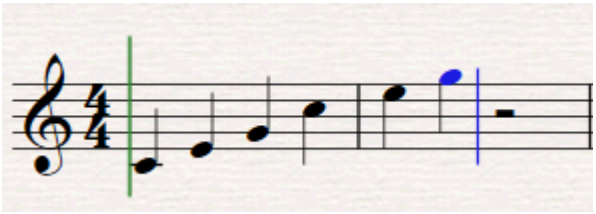
Since there are only two types of arpeggio fingering ("123" and "212412") I wrote a "finger arpeggio" method that takes in a motif and places in the appropriate arpeggio fingering for the "123" arpeggios (C,G,D,A,E,B,F).

Timeline

Date	Goal	Met
November 1st	Be able to finger the notes between the motif and transition sections correctly	Yes, my algorithm fingers the notes between the motif and transition sections correctly
November 8th	Be able to finger the 7 ”1-2-3” arpeggios	I improved the motif finder algorithm.
November 15th	Be able to finger all 12 arpeggios	The algorithm can finger 7 arpeggios (C,G,D,A,E,B,F)
November 22nd	Implement a decision-making process for whether the algorithm should apply the ”motif” or ”normal” method to finger, and within the ”motif” method, be able to correctly gauge the ”optimal motif”	–
November 29th	Be able to analyze and finger chords in preparation to finger left hand	–

Reflection

This week, I expanded my work with motifs to account of different octaves. Of course, I still need to make strides in debugging this method further on many more test cases, but below is a test run on the C Major Arpeggio.



Motif: ’060’, ’064’, ’067’

Fingering: [[256, 60, 1], [256, 64, 2], [256, 67, 3], [256, 72, 1], [256, 76, 2], [256, 79, 3]]

Next week, I will begin implementing a decision-making process that will tie what I’ve done so far into a somewhat cohesive whole. While my motif fingering method provides benefits to pieces like ”Believer,” this is not true universally. Essentially, my algorithm can finger basic pieces in a rudimentary manner, but it does not yet have the ability to evaluate the relative ”goodness” of one fingering over another.