Daily Log

Monday November 18

When testing my motif algorithm on "Can You Feel The Love Tonight," I caught an error in how my code parsed rests when calculating all indices at which the motif occurs. To solve the problem, I deleted all occurrences of a rest (represented by -1) using list comprehension before the motif is found. This should be a relatively safe move because the motif usually ends before the occurrence of a rest in most cases.

Tuesday November 19

I expanded the capabilities of my motif algorithm, specifically how it deals with notes in a piece that do not fall within the motif. Previously, my algorithm would assume that almost no change in hand position was necessary, but this is unrealistic for the majority of piano pieces. Because motifs often start and end in the middle of sections, I couldn't just use my original algorithm. Instead, I took the idea of using local mins and maxes but eliminated sections. Every time my algorithm identifies a local min/max pair, it will stop and finger all the notes in between, using the already-placed fingering as reference. Thus, the fingering works in 2 scans: the first scan fingers the motif, the second scan uses what was already placed to fill in the spaces in between.

Thursday November 21

I transferred my knowledge of how to deal with minor hand position changes from my original algorithm to my motif algorithm. My motif algorithm now has all the core knowledge of my original algorithm but with the added bonus of being able to identify and finger motifs. Writing the algorithm a second time also resulted in much cleaner code, which was quite satisfying.

Timeline

Date	Goal	Met
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"	I realized that my motif algorithm was not sophisticated enough for evaluation, so I expanded its capabilities to be able to finger pieces with different hand positions.
December 6th	Be able to analyze and finger chords in preparation to finger left hand	–
December 15th	Incorporate ability to decide when crossover is appropriate and implementing crossover in basic scenarios	–

Reflection

Although I began this week with the goal of evaluating different fingerings, I realized that my motif algorithm was not yet as capable as my original algorithm in being able to finger a variety of pieces without error. Thus, the focus of this week centered around transferring much of my on how to handle minor variations over to my motif algorithm. Below is an excerpt from Hanon's Exercise No. 19.

Motif: '057', '069', '065', '067', '069', '065'

Fingering: [[64, 57, 1], [64, 69, 5], [64, 65, 3], [64, 67, 4], [64, 69, 5], [64, 65, 3], [64, 64, 2], [64, 67, 4], [64, 59, 1], [64, 71, 5], [64, 67, 3], [64, 69, 4], [64, 71, 5], [64, 67, 3], [64, 65, 2], [64, 69, 4]]

After Thanksgiving Break, I will begin work fingering the left hand and handling pieces in both treble and bass clefs. Since the left hand mostly handles chords in basic pieces similar to the cases I'm working on right now, I will focus on being able to parse chords from a MIDI file and fingering them.