Journal Report 3
9/16/19-9/23/19
Irina Lee
Computer Systems Research Lab
Period 1, White

Daily Log

Monday September 16

The algorithm now breaks the piece into sections based on rests, but I need more refined/detailed sections to help analyze the piece.

Tuesday September 17

The algorithm now breaks the piece into local mins and maxes as well as rests. There are two types of sections - static and changing. Static means that all the notes in the section don't require a change in hand position. The "changing" sections indicate a hand in motion, from one static position to another (a minor alteration).

Thursday September 19

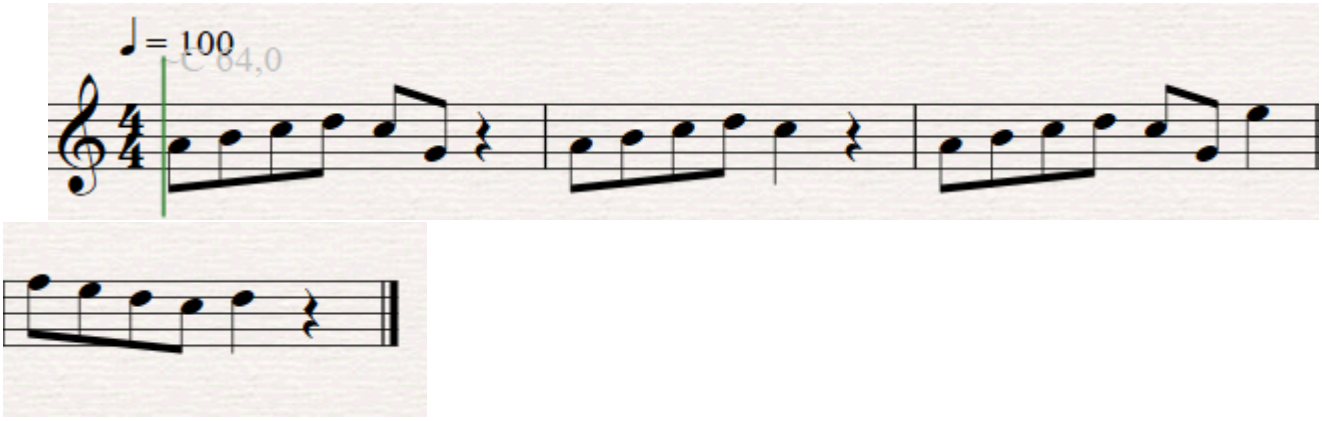
I wrote script that can place fingering in the "changing" sections. I mapped out the patterns for 6ths, 7ths, 8ths, and 9ths and found that the major difference between them is the number of '2's that are placed down. The fingering for these "changing" sections is also based on the number of fingers involved in the shift. If it's greater than 5, a crossover becomes necessary. If it's 5 exact, then the span of the notes becomes irrelevant since you can only put down "1 2 3 4 5." If it's less than 5, then I wrote a method that helps calculate which finger should go where, but it still needs refinement and cannot handle consecutive minor shifts.

Timeline

Date	Goal	Met
September 5th	Convert MIDI to text file and write script to extract all necessary information	Yes, I created an array of arrays, with the larger outer array representing the entire piece and each inner array representing a note or rest.
September 12th	Write script to finger C, G, D, A, E, major scales	The algorithm can write script to finger pentatonic scales and basic pieces like "Mary Had A Little Lamb" that don't require hand movement.
September 19th	Write script that can adjust to minor alterations and finger a C Major Scale	The script can put in fingering for minor alterations
September 26th	Write script that can deal with consecutive minor alterations and finger a C Major Scale	–
October 4th	Write script that can deal with one major alteration (a crossover)	–

Reflection

Given a piece of music that requires minor alterations in hand position, my algorithm can partially successfully write in fingering. It is not yet able to deal with consecutive minor alterations. Attached is an excerpt from "Can You Feel The Love Tonight" as well as an array with the fingering placed in. The last three notes of fingering are slightly incorrect because I forgot to have the algorithm compensate for the newly changed fingering based on the shift to the high E.



Fingered Array: [[128, 69, 2], [128, 71, 3], [128, 72, 4], [128, 74, 5], [128, 72, 4], [128, 67, 1]] [[128, 69, 1], [128, 71, 2], [128, 72, 3], [128, 74, 4], [256, 72, 3]] [[128, 69, 1], [128, 71, 2], [128, 72, 3], [128, 74, 4], [128, 72, 3]] [[128, 67, 1], [256, 76, 4], [128, 77, 5]] [[128, 76, 3], [128, 74, 2], [128, 72, 1], [256, 74, 2]]

Next week, I will work on handling consecutive minor alterations like those found in the piece "Believer." If that is successful, I will move on to analyzing major alterations/crossovers.