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Daily Log

Monday February 17th

President's Day

Tuesday February 18th

I created an algorithm that figures out how to place fingering in succession. Essentially what I do is create an equation 2x + 3y + 4z = total (number of notes in the section), with x, y, and z representing the frequencies at which crossovers at the index, middle, and ring finger occur respectively. I assume that the crossover ends in a 5, so I put a single 5-block at the end (this might be subject to change later). Because crossovers at the middle finger are the most stable and common, I try to maximize the variable y. To avoid a lot of pointless crossovers at the index finger, I weight z higher than x. Today, I was able to finger a two-octave c major scale, but in an unconventional way. My algorithm created blocking like (2, 4, 4, 5) which resulted in the fingering 1-2-1-2-3-4-1-2-3-4-1-2-3-4-5. In the standard case, a pianist would play a piece with (3, 4, 3, 5) blocking, resulting in 1-2-3-1-2-3-4-1-2-3-1-2-3-4-5. At this point, I'm not sure how important convention is - I'll probably tweak this crossover algorithm on different scenarios before I try to make it similar to the standard.

Thursday February 13th

My next test case, Por Una Cabeza, presents multiple challenges. Of course, it tests my crossover algorithm, but it also emphasizes flaws in how my LilyPond output method deals with dotted notes and rests. More importantly, to finger Por Una Cabeza, I will need to implement a "no thumbs on black keys" rule and integrate that with my crossover method.

Timeline

Date	Goal	Met
February 7th	Algorithm can handle crossovers in succession	I focused on fingering chords in succession and completing pieces with little to no motif.
February 14th	Be able to handle more complex crossover scenarios	Can handle crossovers in Czerny's Exercise No. 1
February 21st	Be able to handle crossovers in succession (e.g. 2-octave scales)	Yes, I successfully fingered a 2-octave scale.
March 6th	Be able to finger and output "Por Una Cabeza."	–
March 13th	Integrate new version of "place fingering" method with the motif algorithm to generate fingering variations	–

Reflection

This week, I developed the basic skeleton of how my code deals with crossovers. Below is how it fingers a 2-octave C major scale. Next week, I'm going to focus on fingering Por Una Cabeza.