

# Journal Report 15

01/13/20-01/20/20

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Period 1, White

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## Daily Log

### Monday January 13

I created a file output method that accepts notes and places them in to the .ly text file. After researching the LilyPond documentation, I had my algorithm fill in the notes in the more brute force absolute mode. The octave system used by LilyPond to track notes defaults with C4, then adds an apostrophe to increase the octave and a comma to decrease the octave.

### Tuesday January 14

After further research into the LilyPond documentation, I updated the file output method so that it places fingering newly generated by the algorithm. Right now, I have each note and chord with a corresponding fingering written above or below it. Typically, sheet music has fingering placed in sporadically and at critical junctures, which is up to a human's discretion. I might develop a simple system similar to that (e.g. placing one fingering every five notes, placing fingering at crossovers).

### Thursday January 16

Previously, because the notation for chords and notes are quite different, I had hard-coded my left hand into accepting chords and my right hand into accepting single notes. I wrote code that could detect the presence of a chord versus a single note and write notation accordingly. I also placed filler rests in to even up the right and left hand staves.

## Timeline

Date	Goal	Met
January 3rd	Winter Break	–
January 10th	Be able to generate a .ly file with correct notes	Created a .ly template
January 17th	Be able to generate a .ly file that reflects the notes and fingering	Created a file output method that generates a .ly file that reflects notes and fingering
January 24th	Debug the program's issues with fingering Fur Elise	–
January 31st	Improve the crossover algorithm to be more durable and parse pieces with more advanced crossover situations or crossovers in succession	–

## Reflection

This week, I finished learning and applying all the LilyPond documentation that will be necessary for my project. Attached below is the .ly text file generated by my "file output" method. When opened with LilyPond, the .ly file will generate a pdf file with all the necessary information (piece name, composer, notes, and fingering) placed in. With the output portion of my project finished, I will spend the rest of my time expanding the capabilities of my algorithm as outlined in the schedule.

```

\header{
  title = "Believer"
  subtitle = "Imagine Dragons"
}

\score {
  \new PianoStaff <<
    \set PianoStaff.instrumentName = #"Piano"
    \new Staff \absolute { \time 4/4 a'4-2 e''4-5 d''4-4 d''8-4 c''8-3 d''4-4 d''8-4 e''8-5 d''8-4 c''8-3 a'8-2
      g'8-1 a'4-2 e''4-5 d''4-4 d''8-4 c''8-3 d''8-4 e''8-5 d''8-4 c''8-3 a'8-2 g'8-1 a'4-2 }
    \new Staff \absolute { \clef "bass" <a,-5 c-3 e-1 >1 <a,-5 d-2 f-1 >2 <a,-5 c-3 e-1 >2 <a,-5 c-3 a-1 >1 r1 r4}
  >>
  \layout { }
  \midi { }
}

```

