

XML Element Tree API

Getting rid of the useless stuff.

- Storing pitch and octave in a nested list of nested lists.
- N lists where each list represents one measure
- Each measure (list) contains 64 sublists which represents a 64th unit of time
- Each 64th unit combines all notes from the top and bottom staff

Element Tree API
XML Reading Code

[[[], [], [], [] ... []]

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[[], [], [], [] ... []]

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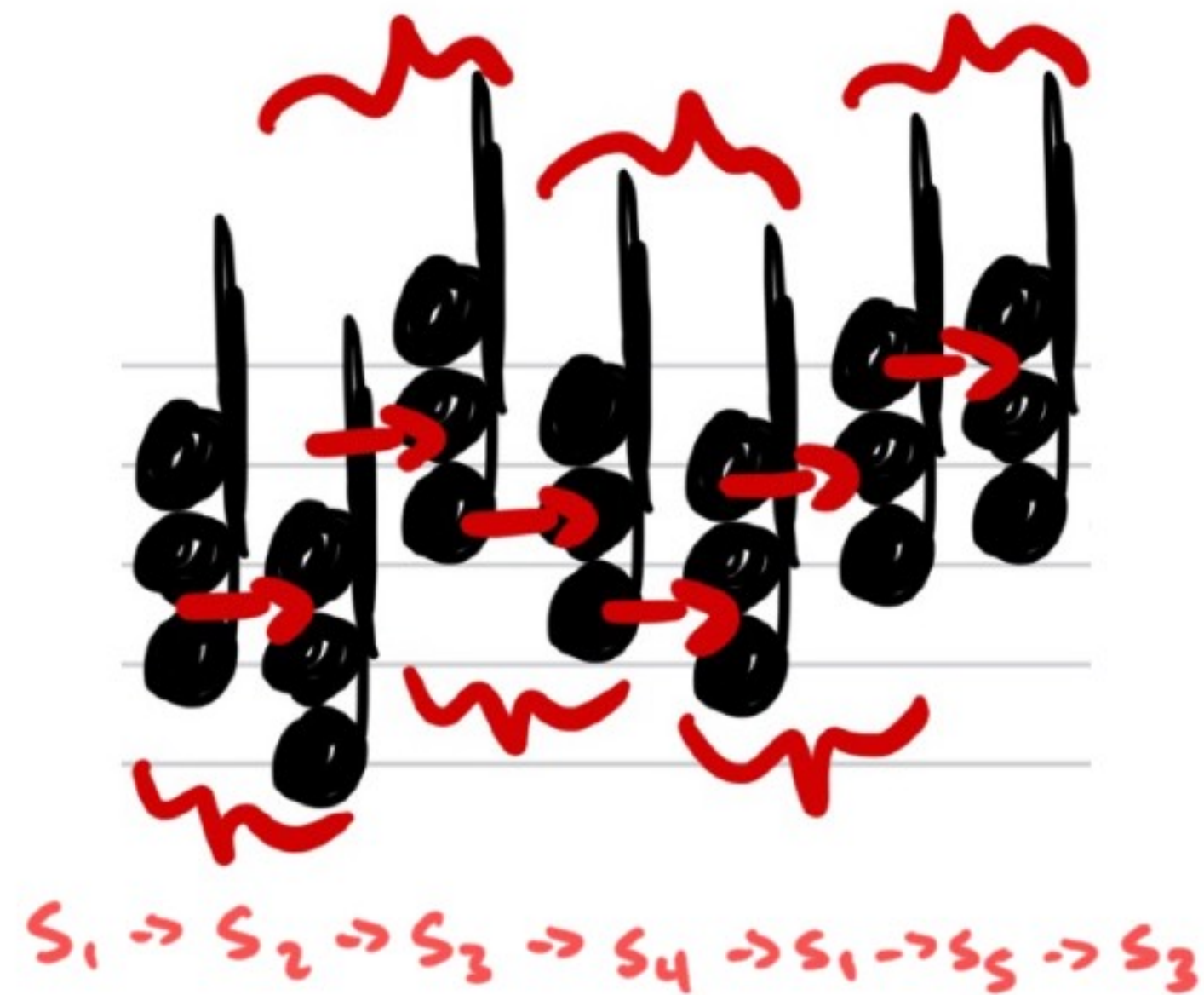
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[[], [], [], [] ... []]

[[], [], [], [] ... []]

Transition States for Markov Chain



$$\begin{matrix} & s_1 & s_2 & s_3 & s_4 & s_5 \\ \begin{matrix} s_1 \\ s_2 \\ s_3 \\ s_4 \\ s_5 \end{matrix} & \begin{bmatrix} 0 & 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \end{bmatrix} & \rightarrow & \begin{matrix} & s_1 & s_2 & s_3 & s_4 & s_5 \\ \begin{matrix} s_1 \\ s_2 \\ s_3 \\ s_4 \\ s_5 \end{matrix} & \begin{bmatrix} 0 & 1/2 & 0 & 0 & 1/2 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \end{bmatrix} \end{matrix}$$

make this matrix row-stochastic

$$\begin{matrix} & s_1 & s_2 & s_3 & \dots & s_{n-1} & s_n \\ \begin{matrix} s_1 \\ s_2 \\ s_3 \\ \vdots \\ s_{n-1} \\ s_n \end{matrix} & \begin{bmatrix} & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \\ & & & & & \end{bmatrix} & \end{matrix}$$

on a large scale