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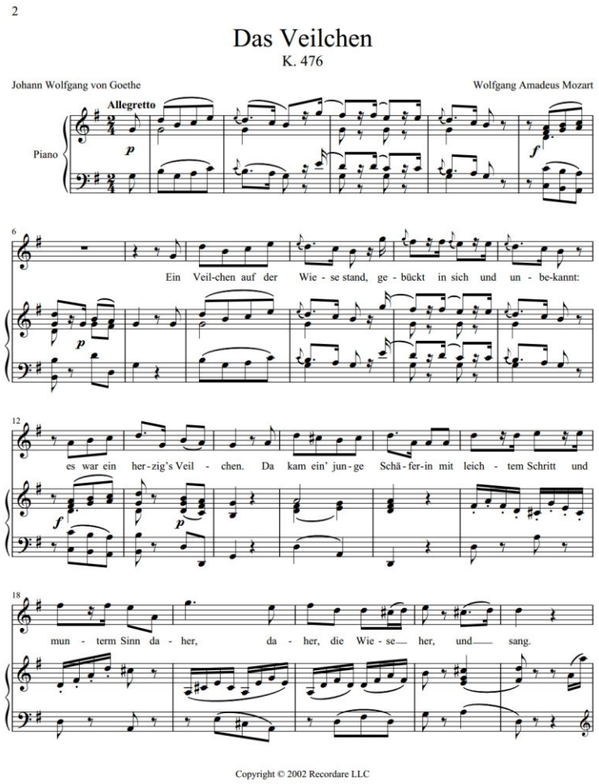
# Final Assignment Proposal: Music visualization

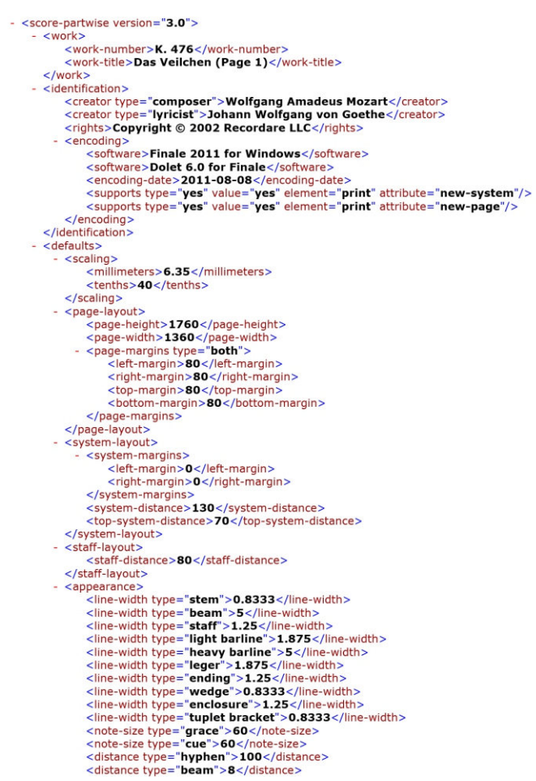
I'm interested in the digital formats of music which is widely used for music sheet sharing on the internet. One of them, MusicXML is respectively suitable for Python programming, and can be processed by packages such as **music21** and **python-ly.**

Music is a kind of code that involves different combinations from the same series of notes, with different **pitch** and **duration.** In the 12-tone chromatic scale, each note has a name (for example, A4, B4, D#5) showing their pitch or in other words, their **position** in the staff. A musical composition is made from specific arrangements of notes by the composer. Using these information, music can be visualized based on the **relationship** between the notes.

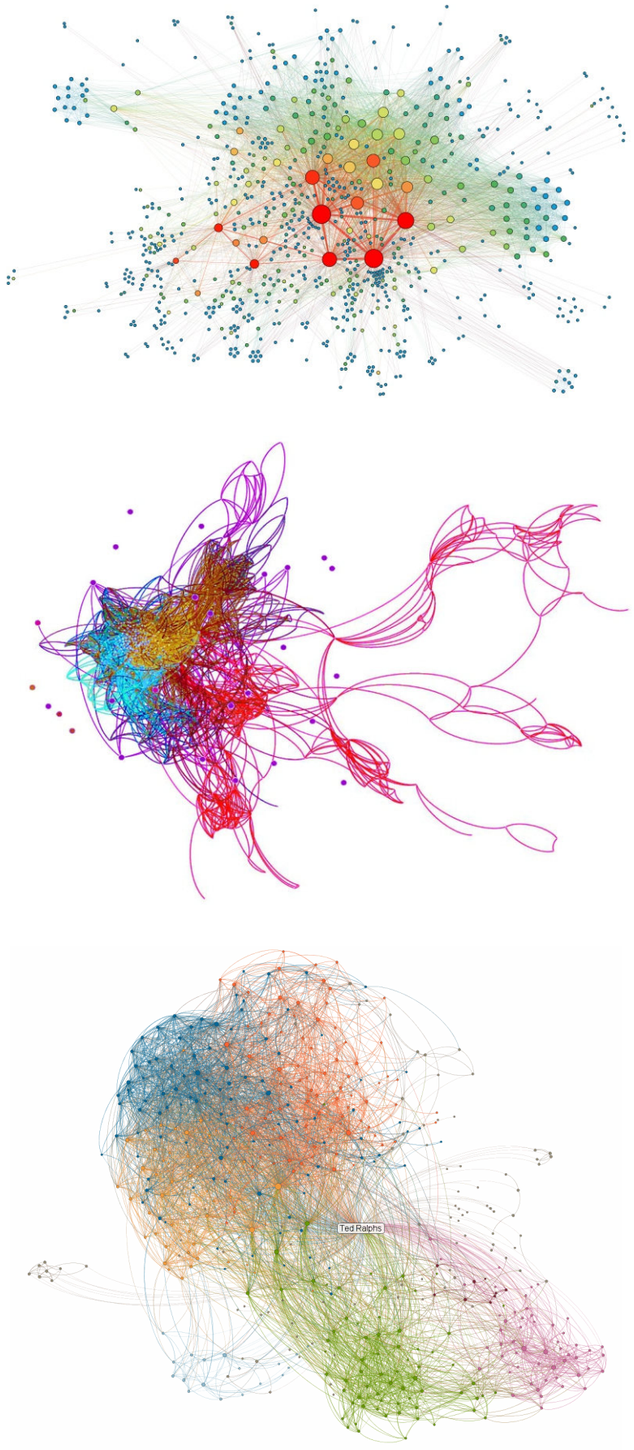
I will extract the data of note names and duration from the XML file, then use **NetworkX** to visualize the connection between them. The **position** of notes will based on their name (or **pitch).** The **colour** will based on their **duration,** so we can have many nodes with the same note name but different colours, and the **size** of node will based on their **frequency of appearance** in the music piece. The **curve or line** will be created from the way that notes blended together to form **chords.**

The final visualization will show us the graphical image created from a musical piece, in other words, the form of music.




Comparison of a music data (in this case, Das Veilchen by Mozart) in sheet format and the underlaying XML programming format.




Expected outcome data visualization using **NetworkX**