# MusiColor

Link: http://mthoma52.com/musicolor/

Project 2 Team: Manu, Michaela, Christel

Description

Our project is about matching colors to sounds. We matched the frequencies of colors to the frequencies of the musical notes of a scale. We want to give the user an experience of being able to see the frequencies of a musical tone while seeing the colors that we have matched to that tone. The user will be able to choose different colors to play for a single melody. Once they press play the music will play and show the frequencies of the notes that are playing.

The user will be able to choose from a line chart, bar chart, and tree map that will represent and show the frequencies of the notes being played.
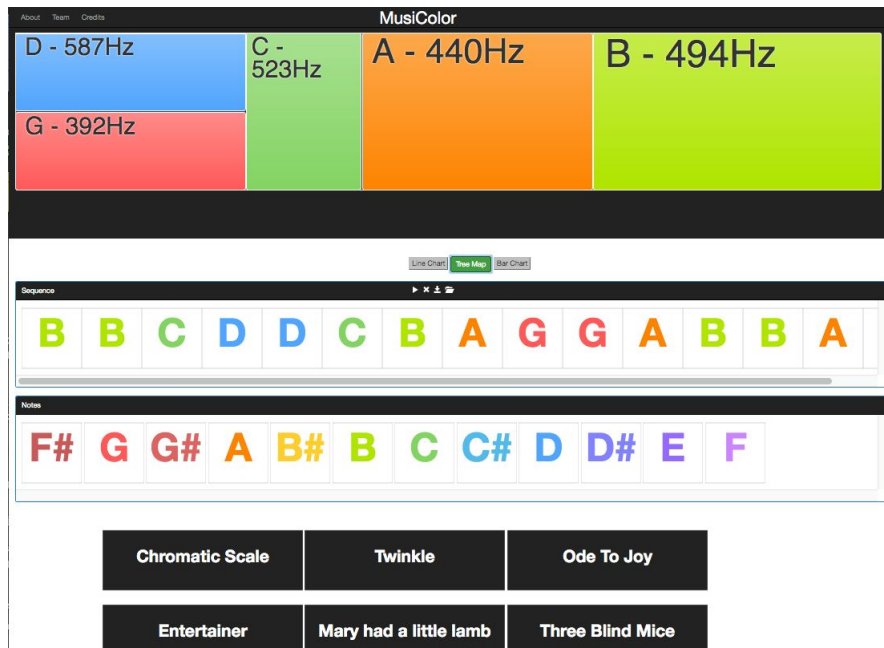
Line Chart
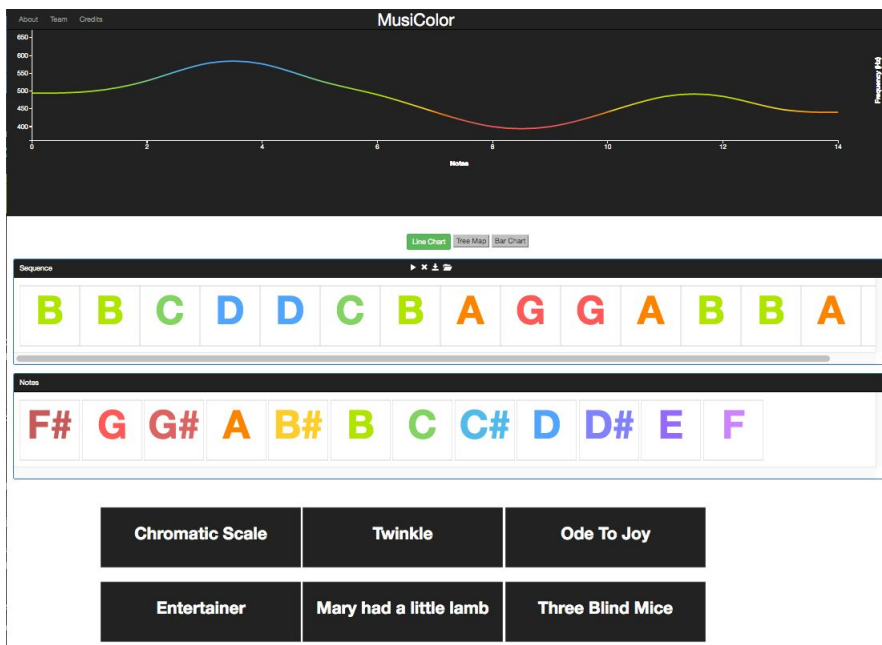
Bar Chart

Tree Map

Data

For this project, we are using user-generated data. Once the user finish making the melody by dragging the notes, a JSON file is generated which is used by d3.js for visualization.

Note	Freq (Hz)	+40 oct. (THz)	Wavelength (nm)	R	G	B	Color	HTML name
F♯4	370	407	737	174	0	0		dark red
G4	392	431	696	255	0	0		red
G♯4	415	457	657	255	0	0		red
A4	440	484	620	255	102	0		orange–red
B♭4	466	513	585	255	239	0		yellow
B4	494	543	552	153	255	0		chartreuse
C5	523	575	521	40	255	0		lime
C♯5	554	610	492	0	255	242		aqua
D5	587	646	464	0	122	255		sky blue
D♯5	622	684	438	5	0	255		blue
E5	659	725	414	71	0	237		blue
F5	698	768	390	99	0	178		indigo

We are also basing the colors off of this chart. We took the frequency of the notes of a musical scale and added forty octaves to bring the frequency into the visual range. We then converted those numbers to nanometers and from there found the RGB data of the wavelengths. This is how rationalized matching up the colors to the notes.

Interaction

User is allowed to drag the musical notes from the collection to his/her personal track space. They are allowed to extend the amount of time a note is played by dragging that particular note. User is also given an option to save his melody as JSON file for later use.

Visualization

For the project we are showing three visualizations you can toggle: 1. Line graph showing wavelength vs time and each note will have it's own corresponding color(based on Michaela's Thesis). 2. Bar chart showing wavelength vs time with color encoding. 3. Tree map showing how frequent a note is played in the series.

Team

● Michaela (Designer) worked on adding sounds interactions and UI.

● Christel (Designer) worked on user interactions and UI.

● Manu (CS) worked on visualization(line graph and bar graph and tree map)