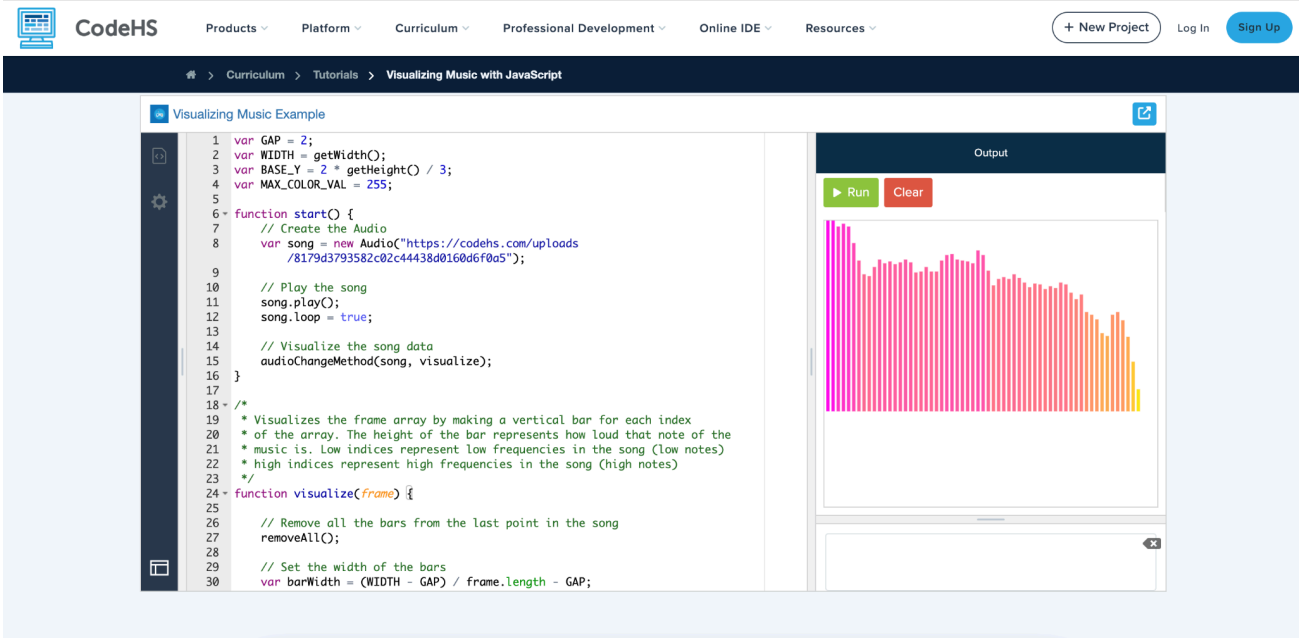
Snowball Falling

Crystal Chen yanyuc3@uw.edu AA

https://editor.p5js.org/yanyuc3/sketches/80OHqphj-

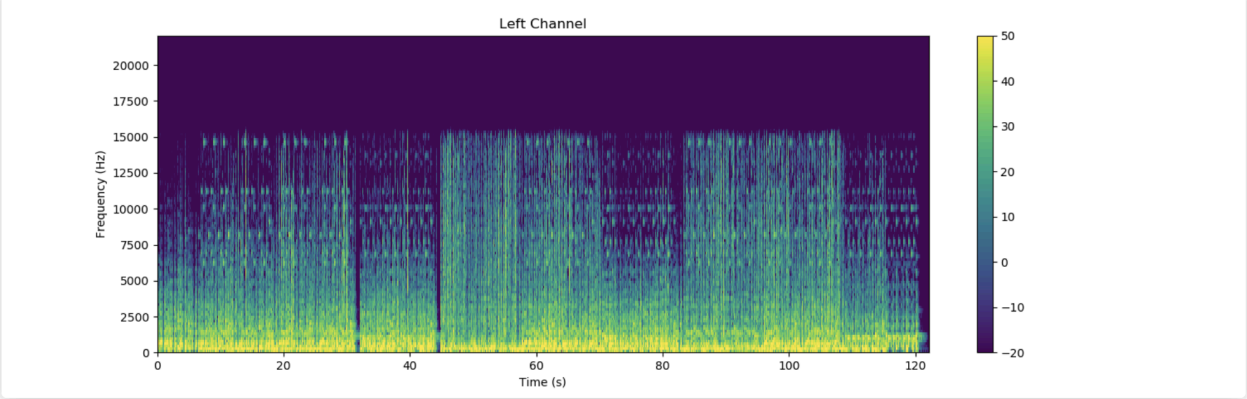
Design Research:

Sound visualization 1:



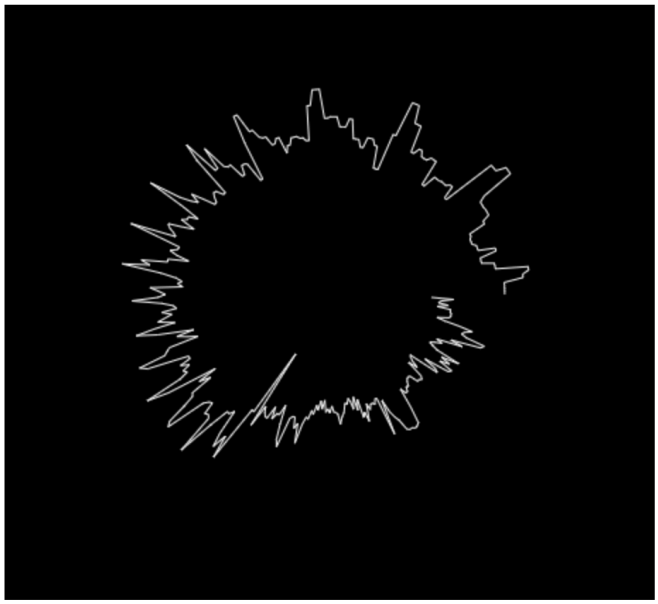
The visualization of sound in Javascript shows the loudness of sound note by heights of vertical bars. A yellow bar that gradually transitions to pink as it rises.

Sound Visualization 2:



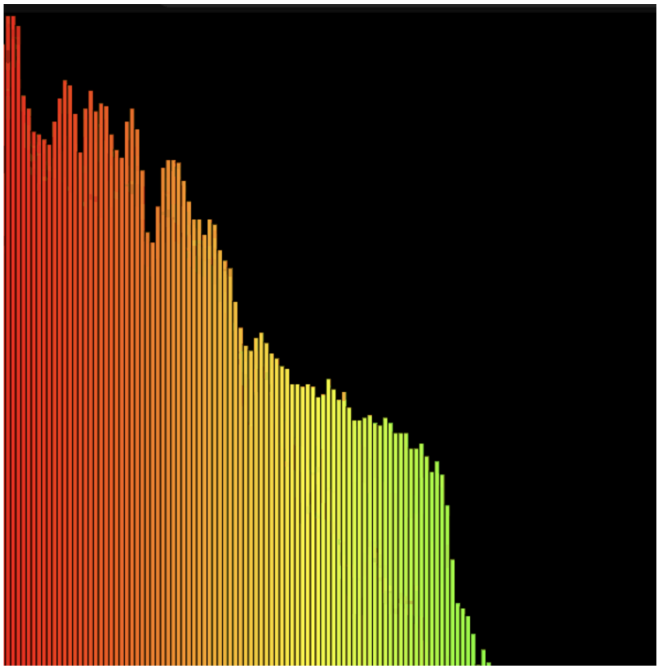
A visualization of frequency spectrum displaying the dominant frequencies in the recording over time in python. The predominant frequencies throughout the track remain below 2.5 kHz.

Sound Visualization 3:



The amplitude of sound in radial graph, updating lines around the circle over times. And mapping amplitude value from (0-1) to (10-300) is try to make the circle corresponding to appropriate size on canvas.

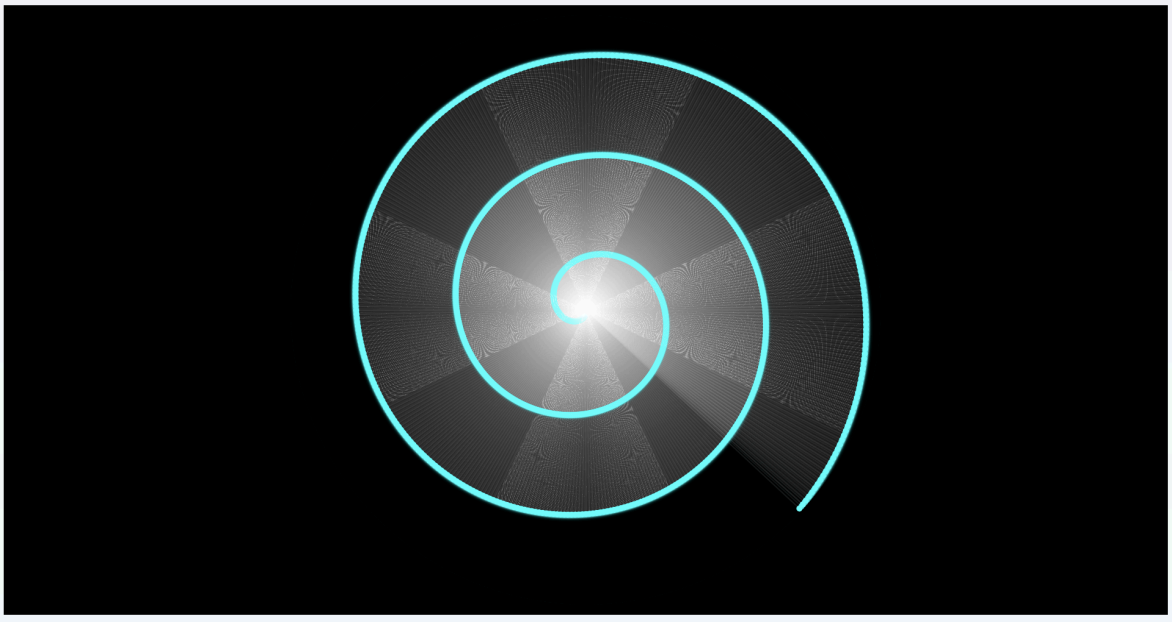
Sound Visualization 4:



Interactive bar plots for each frequency band, tracking from Fast Fourier Transform p5.FFT().The height of each bar corresponds to the amplitude of the band.

Sound Visualization 5:

Drawing with Waveform



This is an interactive, rotating audio visualizer based on microphone input. The sound wave is shown from rotation of the each ellipse. The line or dot drawn outward and the color of the ellipse are based on waveform.

Audio Visualization:

Link: https://editor.p5js.org/yanyuc3/sketches/80OHqphj-

I set up an picture with snowman behind as the background of the canvas. The sound visualization I want to show is about the snowy days and the “orange sun”. The size of the snowballs is cooperating with the amplitude level of detected sound. Since the amplitude of mic level detected is ranged from 0.0 to 0.1, mapped mic level from 0 to 50, 1 to 200 to make the snowball to be clearly drawn. The higher the amplitude is, the bigger the snowball is. Then, after the snowball being made, it falls down vertically to the end of the canvas, which is similar to the snow we see in the cartoons. The snowball is filled with white color and surrounded with light blue to recognize each snowball.

Prompt from:
https://nishanc.medium.com/audio-visualization-in-javascript-with-p5-js-cf3bc7f1be07

On the top right corner of the canvas, I made a radial graph as the 'sun', where lines around the circle represent miclevel. The length of lines changed with the mic level and moved around the circle as a rotated object. As the amplitude of detected sound goes higher, the size of snowball gets bigger and the height of line gets higher at that time. Orange lines around the circle get updated after mic level being stored and shown within 360 degrees.

Learning Reflection:

For this assignment, the part I surprised was the connection between sound and visualization, where convert amplitude or series of frequencies to desired visualization we want to have, including size of the snowballs and change of colors. The thing I struggled with was the inner for loop of draw function, where function itself runs repeatedly once the sketch started. In this case, where to update background(), and where to translate new position of objects are important to consider. Since I remapped the value of mic level, the size aligned with the mic level is clear to be shown on the canvas, which provides users direct and easy access to understand the mic level. Movement of each snowball similar to snow flakes in snowy days is interactive and interesting, and rotated circle with vertical lines indicates detected sound in a different and obvious way. However, since the detected sound are pushed and stored in an 360-length array then shown on the radial graph, it'll get updated quickly and removed the sound

made seconds before. The appearance of snowball started in a random position on the canvas, if the website collected many sound in almost the same time, snowballs might be crowded and hard for users to recognize the exact sound.