Write up for project 1

MUSIC PLAYER

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Project aim

Into:

Create an "audio visualiser" which will display audio to the user through the frequencies created by the audio needed.

Project Goals:

1. Have audio loaded
2. Have the audio visualised
3. Be able to control audio

How I believe it would be done:

With **P5.js library's** I will be using the sound library which contains the use of **FFT** (Fast Fourier Transform) which will allow me to analyse the audio data and produce numerical values which I can then input into multiple Parts of my program. Also, in addition, I plan to use the **"get Energy ()"** function which would allow me to get multiple variations of data from the song being inputted. For example (bass, mid and high frequencies).

Extra:

I have also aimed to have additional feature like "volume control" (which would allow for the user to increase or decrease the volume)," Play, pause, forward, Rewind" function which would allow for the user to control their songs. As an added extra I would love to have a 3D object displaying the album art.

Design Plan
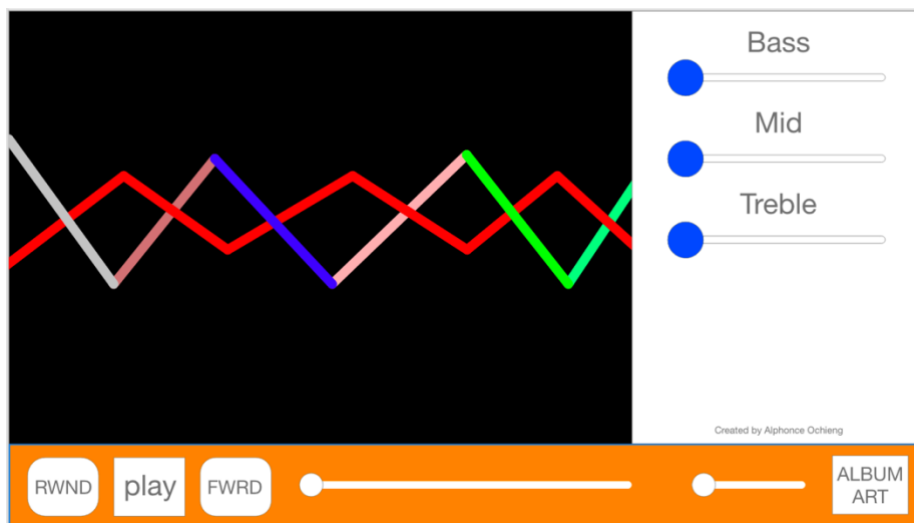
I used adobe XD and used this as reference of how I envisioned my application to become.

project management
progress log

Number	Task	Description	Start	End	Complete/in progress/fail/partial	How to improve
1.	Create background	Have the background for the program	23/2/21	1/3/21	Complete	Have the background use a gradient instead and have it fade between colours
2.	Play audio from a file	Use an audio file and have it loaded onto the program.	23/2/21	28/2/21	Complete	Have the audio playable so it can be played correctly.
3	Have a "play/pause button", "next button", "Rewind button".	When the user wants to move on to the next track or go back or stop the track, they should the need	3/3/21		Partial	Has it show the play or pause image when played or paused and be able to skip or rewind track?
4	Have audio displayed visually.	When the music is playing it should a wave pattern reacting to the user song.	17/3/21	1/2/21	Complete.	It could be completed through the use
5	Can the album art load when the user plays the song?	The user should be able to see the album art when the song is loaded.	24/2/21	5/3/21	Partial	The image can load but is only stuck on the first image.
6	Can the user change the volume when needed?	User should be able to change the volume of the music			Complete	N/A satisfied by this feature

		when needed				
7	Have a pop message.	Explain to the user who may be new the feature of the program	27/2/21	1/3/21	Complete.	Have a sound that plays when the program is running for the first time (like a welcome sound.

Error log (Challenges faced).

- Boundary issue

Error occurs if user passes the last track which had the issue of going blank.

How it was corrected
If statement adjust from 4 to 3
Previous

```
if (control.songcount >= 4){
```

Adjusted

```
if (control.songcount >= 3){
```

- Translation issue
Didn't notice that translations needed a "push & pop" command and previously had my all the item that I made pushed below and had coded to accommodate this issue by adjusting the code to move the code up, then figured out that it was just a "push ();" and "pop ();" needed.

- Variable issue
When separating my code, I had the issue of my track not displaying but then used console log to find out that it wasn't defined. (added it to the variable section).
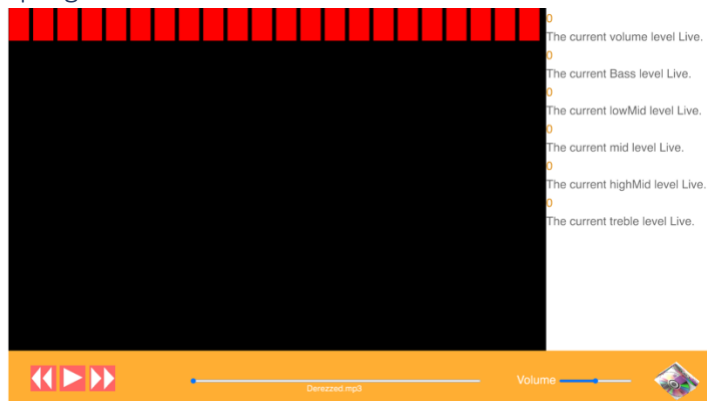

- Code reptation
Used a for loop to reduce the need for repeated code.

Project overview

## Screenshots

"program static" screen

This is the screen that the user sees as which contains on the left corner a **rotating album** art (which was used to indicate if the program is still running) which moves with the user mouse, a volume slider on the side of it which control the volume levels. Above contains in data being read which the user can see live.

The left top side contains the volume bar which react to the volume of the track. The bottom left contains the controls which would be used to control the user tracks.

Finally in the centre would be progression bar which would how much of the song is left.

### "Program in use" screen
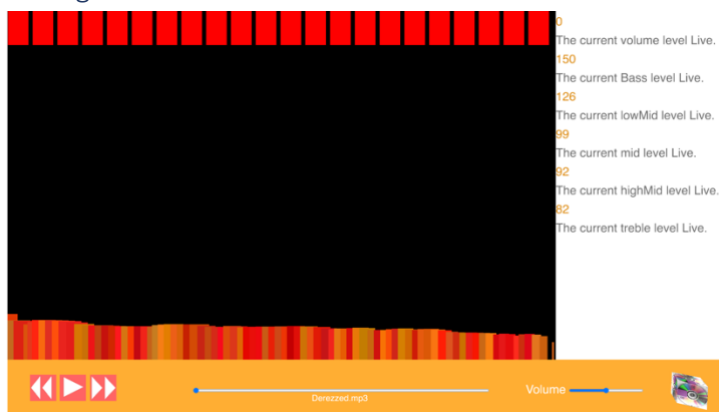
As display, when the program Is in use it will display the audio specification on the right, which is be rounded so there no use of decimal number which is easier to read.

"Notifications" screen
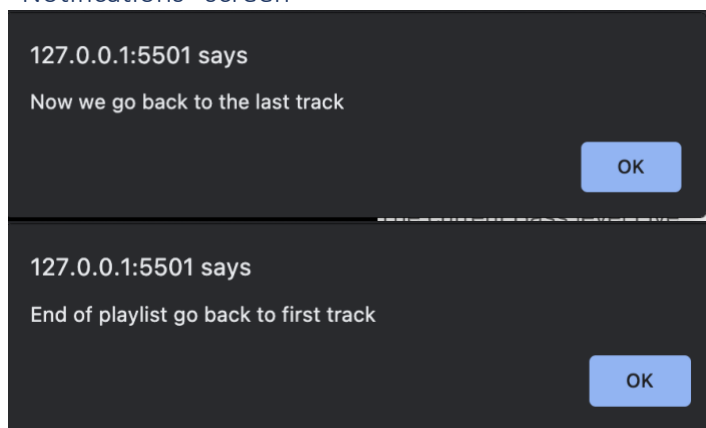
There are two notification that come up from either going past the tracks loaded (which it would say "Now we go back to the first) or if it goes below the first it will go the last track (then say "End of playlist go back to first track"

"tracks"
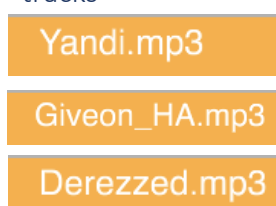
As the user go skips of rewinds tracks it will go through the list of tracks. Which once it hit the upper or lower boundary it will revert to the first or last track.

Code structure

To start with the code was originally places between an HTML file, one JS file and used libraries. After researching, I was able to create multiple JS files dedicated to each main function to allow for easier modification while creating the program. Also, I used the object to allow the program to read off similar specification of parts instead of having to read similar code repeated over and over. Finally, I used a variation of loops to reduce the need to repeating code.

Self-evaluation

Overview

I believe the program has met the main goal of being able to show audio-visually, with the addition of a few feature on top which would make it more useful and would move it past from just an audio visualiser to a music player.

What went right.

- Was able to get the audio load and play on the application
- Was able to visualise the audio.
- Button function correctly (tested through console log which is now commented out).
- Was able to add a 3D object.
- Have a form of notification for the user (either a pop-up or a sound indicating a user click).

What went wrong?

- The track was able to move forward in the array but was only able to play the first track.
- "Spinning album cube" was only able to show the first song picture.

How to improve?

- Get a primary counter which the get the track and picture can count from the same array allowing the picture to load when the user changes track.
- Be able to skip and rewind songs.
- Have button change from pink to a lighter hue to indicate it has been pressed

What would I change or add?

- A feature I would add in the future would be the ability to input songs from an external web service (Spotify/SoundCloud).