List modifications and extensions made to the template. (400 words)

What is the function of the extension?

There is a t total of 6 extensions inside the music visualizer, where the template includes following extensions: spectrum, wave pattern and needles. Upon the template, I have chosen to added Firework and ridge plots to the music visualizer app. Lastly a new extension named 'bloom' that I had came up with from scratch that is inspired from previous extensions and the original apple music visualizer.

How does the code fit into the template design?

For all extensions I tried to keep using the same format as the template extensions as possible. It is more neat and organized for both reading and debugging.

How have you structured the extension code?

For every extension I intend to name the file by the extension name for easier tracking, every extension's main file will definitely have a draw function (or a setup function) and some may have more than one function depending on how many components it is broken down into.

Describe how effective the plan was in completing the project. (250 words)

Did you stick to your schedule?

I schedule my progress based on the Coursera weeks and topics, for example every topic has two weeks so I will have two weeks to do a specific task.

From the start to mid-term, I was capable to keep up with Coursera's speed and tasks, however as the tutorial adds more advanced extensions It took me longer time to read and learn each of the new functions.

Did you divide up task and time effectively?

Overall, I think the schedule was spanned across a good amount of time as tasks were done one by one gradually increasing in difficulty and amount of time needed to learn. Though sometimes I may not be able to keep up in certain parts, but I had never lost track of where to continue next.

Did you have an unexpected difficulties or challenges?

I had lots of difficulties during the process of writing each extension, it was easy to just watch videos and lecture writing but after I've taken a closer look at the extensions, found it was not as simple as I see it. All extensions have used many functions, this implies research and analysis must be done in order to implement these functions and techniques in the project. For example, the hardest extensions that took me the longest time to debug was the firework extension. Since it has debug to do for itself to print to the screen as well as to fix the errors it caused to other extensions.

Evaluate the process of completing project and how effective final product is (250 words)

Self-evaluation of process of completing the project

First, this topic has given me a very big interest since I've chosen to do this project 'music visualizer application'. Reason being I think that visualizers and similar ideas are a sign of futuristic, by turning something non-visual (music) into views that humans are able to see. Hence being the biggest motivation for me to keep up with the work and enjoy the progress.

System or user testing

User testing was done by my family members, they have given some good advice on the visual and feedback on the overall look. For example, one said there could be some changes in the background color as my previous version had the same background color shared across all extensions. Another advisor said that the menu can be decorated even more but in a simple look, hence I thought it would be suitable to create a fading user menu that slides in and out of one side of the screen, similar to a three dot button in typical webpages.

Some technical advice were given by friends in the same year cohort. For example, creating objects is helpful for organizing and keep modularity. And another suggested to add simple user interactions to each extension can make the music visualizer app more interesting coming from the user perspective.

Upon all advice given, I've also decided to add an intro page that instructs the user actions. "Press space for Menu" appears once the application is loaded, disappears when space bar is pressed and appears again if space bar is pressed one more time through the whole music visualizer page.

List external sources that are actively utilized in the project.

Code copied:

The firework and ridge plot extensions' original version is from Coursera

Code inspired by:

The bloom extension was entirely inspired by all previous extensions, majority extensions share the same idea.

Help forums:

Searched on Stackoverflow for debugging

Looked for complicated shape drawings on Stackoverflow as inspiration

External libraries:

All functions and resources used are only from p5.js

- p5.Sound

For example:

- lerp()
  - Made breathing effect to the bloom extension, appears to be alive
- getEnergy()
  - to capture and record the frequency from a track of sound
- analyze() & waveform()
  - returns the amplitude and snapshot of the amplitude readings of a music file